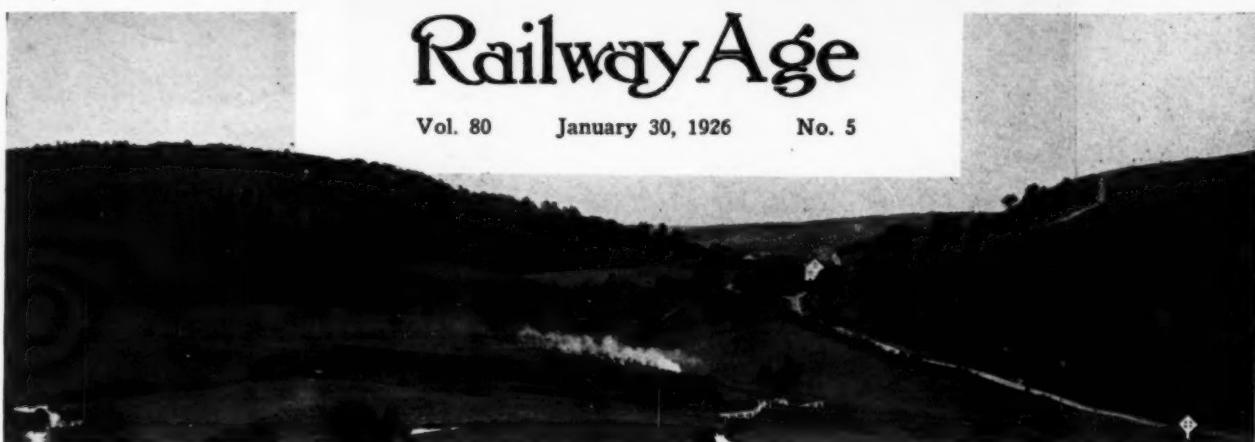


Railway Age

Vol. 80 January 30, 1926 No. 5



Beaver Meadows on the Buffalo Division of the Buffalo, Rochester & Pittsburgh

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Railway Age

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A Preliminary Annual Report

ISSUANCE by President Ralph Budd of the Great Northern of another preliminary annual report on the operations of that company is interesting and commendable. This preliminary report, for 1925, printed in the form of a small leaflet which was inserted in the envelopes containing the February dividend checks for the stockholders, is in the hands of the stockholders three or four months earlier than the usual annual report. It contains comparative income statistics for 1925 and 1924, those for 1925 being approximate. Discussion by President Budd of the questions of adequate earnings, betterments of service, operating records and conditions in the territory served by the Great Northern, while brief, are sufficient to give an accurate picture of those phases of the Great Northern's position in which its stockholders are most interested. Stockholders have been accustomed to wait for several months after the beginning of a new year for the report on the previous year's operations of their company. This has been due to the fact that the labor of preparing a complete annual report cannot be concentrated into a short period. The plan of the Great Northern of sketching briefly the company's history in the past year very early in the new year offers a distinctly better service to its stockholders. Incidentally the publicity attendant upon the early publication of the Great Northern's preliminary annual report has had the effect of drawing attention to questions like that of earnings which need a wider understanding by the public.

After Graduation—What?

A VISIT to an engineering college of one of our universities discloses a peculiar state of affairs. A number of the seniors, for various reasons, are greatly interested in railroad work and the possibilities in that field. They have received the impression, however, that the railroad managements are not interested in obtaining their services. Some of the more important questions asked were: What railroads offer special courses of training in any department for college graduates? How can an engineering graduate best fit himself for and get started in the operating department of a railroad? Are not the opportunities in the operating department greater for the average man with a college training than in any of the technical departments? The scouts from the large industrial corporations will visit the colleges and interview the senior students very shortly; how may one most quickly get a line on the possibilities in the railroad field, so as to take advantage of openings in industrial corporations, if the railroads that do use college trained men are not interested at this time? Some of the students who have been looking forward to railway work as a career are seriously concerned over the reports of former students, some of whom have taken special apprentice courses, but are now reporting that no provision is made

at the completion of these courses for broadening their experience or so placing them that their training and experience can be utilized to a reasonable extent. The seniors ask whether this condition prevails generally or on only a few roads which inaugurated special apprentice courses for college graduates, without making proper plans to assimilate the specials when they completed their courses. Interviews with a number of the students in this particular college indicate that the young men do not have exalted ideas about the kind of positions they are prepared to fill on the railroads or in the industries. They are not so much interested in the amount of compensation received for the first few years after leaving college, as they are in the opportunities for getting the right sort of practical experience and opportunities for preparing themselves for advancement. They do want to know, however, whether the railroads are prepared to utilize college trained men and as to the possibilities for promotion if they make good.

Wise Counsel on Consolidation

A REFRESHING note of sanity has been interjected into the discussion of the consolidation question by the statement on behalf of a majority of the Interstate Commerce Commission presented before the Senate committee on interstate commerce by Chairman Eastman. When the Transportation Act was under consideration the commission proposed a draft of legislation similar to the bill it now recommends, for the purpose of letting down some of the bars imposed by anti-trust laws, some of which were never intended originally to apply to railways. At the hands of Congress, however, in the effort to surround the consolidation process with all sorts of restrictions, the idea was gradually expanded into that of a complete plan of reorganizing the railway structure into a few new standardized great systems. It has also been seized upon by some enthusiasts or idealists as a sort of panacea for the solution of the "railroad problem" and it has appealed to some politicians as one way of promising the people lower railway rates. For six years the commission has endeavored to comply with the directions laid down by Congress to prepare a comprehensive plan, keeping to itself the opinions it had or was developing regarding the policy prescribed for it, but now that the subject is being reopened in the Senate it has come out with the statement that the task set for it is too big for any set of men to handle as one job. It also says that if Congress desires consolidations it should do something to make easier instead of more difficult such as may be in the public interest. The fact that the consolidation provisions of the act have required amendment in order to make them workable has become very generally recognized in six years, but the commission has performed a public service in adding to its suggestions for amendments a warning that "the country ought not to be rushed headlong into any gigantic plan of consolidation which may later prove to be ill-conceived and

based on mistaken premises but that it ought instead to proceed cautiously without any undue anticipation of possible beneficial results, feeling its way along step by step, watching and analyzing results, and allowing experience to guide."

A Record in Furnishing Cars

IT has been shown already in these columns that in the first eight months of 1925 the railways furnished to shippers 99.9 per cent of the freight cars they asked for when they wanted them. The record for the entire year 1925 was even more notable. In the first eight months of last year the total freight business handled, measured in ton-miles, was not as large as in the first two-thirds of 1923, but in the last four months of 1925 it exceeded all previous records for those months. The average number of cars loaded daily last year was 140,214 as compared with 132,608 in 1924 and 136,471 in 1923, the previous record year. There was a net car shortage in the early part of 1923 owing to the effects of the coal strike and the shop employees strike in the previous year, and in 1923 the number of shippers' unfilled requisitions for cars averaged 29,229 daily, or 21.4 per cent of the number of cars loaded. In 1924 the number of shippers' unfilled requisitions for cars averaged 1,047 daily, or eight-tenths of one per cent of the number loaded; while in 1925 it averaged only 428 daily, or only three-tenths of one per cent of the number loaded. Stating the facts in another way, the figures show that in 1924 shippers were furnished 99.2 per cent, and in 1925 99.7 per cent, of the cars they ordered on the days on which they were wanted. The enormous growth of traffic in the southeast, due to the land boom in Florida, presented a very difficult problem, but a peculiar and almost unprecedented one. The great increase in the movement of freight was to Florida and not from it. This freight was moving from all parts of the United States, and there was no difficulty in getting enough cars to load it in. The difficulty was in moving and unloading them after they reached Florida. The total freight business handled in 1925 was as large as any in history, and exceeded all previous records during the last four months of the year, but the record made in furnishing cars to shippers when they wanted them and moving them promptly to destination probably was as near perfect as it ever can be made.

A striking evidence of the increase in the capacity and efficiency of operation of the railways is the way in which they have been transporting enough coal to meet all demands in spite of the anthracite strike and other adverse conditions. The tonnage of bituminous coal moved from the mines in the week ended January 9 was 13,030,000, and in the week ended January 16, it was 13,073,000. These are the largest tonnages of bituminous coal moved in any two weeks in history. The highest record previously reached apparently was that for the week ended December 11, 1920, which was 12,853,000 tons. The difference between the conditions then and recently should be considered. In 1920 coal was being produced somewhat uniformly in anthracite mines and also in non-union and union mines throughout the country. On the other hand, when the new high record for bituminous loadings was made recently a disproportionately large part of the production was in non-union mines in restricted areas, and the coal had to be distributed throughout the entire country, including the territory usually supplied with anthracite. During the big coal movement in 1920, however, there was great complaint of "car shortage" at the mines, while during the recent record breaking movement of bituminous coal there have been virtually no complaints

about car shortages or regarding unsatisfactory distribution to different parts of the country. Improvements in railway physical plant and operating methods and in co-operation with shippers within the last three years have revolutionized the conditions under which coal formerly was transported and which used to cause coal car shortages in every period of large production.

Probably the concentration of cars at a comparatively few large mines in non-union fields recently, as compared to the dissipation of the car supply in 1920 over all fields, has in some ways helped the railways to utilize the available supply of cars better, although undoubtedly it has made it necessary to move much of the coal greater distances to get it to market.

Frisco - Rock Island

THE St. Louis-San Francisco purchase of a large interest in the Rock Island is about the most interesting of any of the steps toward railroad mergers that have taken place since the Transportation Act established the principle that consolidation of the country's railroads into a limited number of systems is desirable. It is important enough that the Frisco's new acquisition unites in common interest two already large systems which have a total mileage of about 13,000. This makes the new system one of the country's largest. It is not larger, however, than some of our present systems, nor does the large area served and the territory's widely diversified characteristics set the system off as against, say, the Atlantic Coast Line-Louisville & Nashville group, the reunited and expanded Missouri Pacific system or the transcontinental carriers such as, notably, the Southern Pacific. The distinctive feature of the present step is from the standpoint of railway strategy. It is of interest especially that the Frisco should take over the Rock Island. It was not so long since that the Rock Island essayed to take over the Cotton Belt, and seemed to be an acquiring road rather than one to be acquired.

Of greater interest, however, is the manner in which the present Frisco-Rock Island union brings toward completion the ultimate merger of the roads in the Southwest. During the past two years, great progress in consolidation has been made in this region. Thus, the Missouri Pacific has rebuilt its former large and extended system with the regaining of its control over the Texas & Pacific and the International-Great Northern, the acquisition of the Gulf Coast Lines and the San Antonio, Uvalde & Gulf, and the securing of a half interest in the Denver & Rio Grande Western. The Illinois Central has acquired the two units of the Vicksburg route. The Southern Pacific has secured the San Antonio & Aransas Pass. The Kansas City Southern acquired an interest in the Katy and the Cotton Belt. As far as the more important roads are concerned, the consolidation map in the Southwest now seems to be well sketched in. The Frisco-Rock Island combination, if carried to fruition, will establish a large and powerful system in a group of large and powerful systems in a region which of late—due primarily to oil development—has been characterized by a very satisfactory degree of prosperity. The roads in the southwestern region have, since the war, made more progress than any others in consolidation. This does not mean that they reached consolidation goals first. On the whole, the Southeast seems to have that distinction, and has had it almost since 1902, when the Atlantic Coast Line acquired control of the Louisville & Nashville. But, with progress such as has taken place so rapidly in the Southwest, is it not painful the lily to talk so much about the necessity of legislation to speed up consolidation progress?

Economic Incentives and Efficiency in Management

EVERYBODY who appreciates the importance of railway transportation as a social and economic factor in the United States agrees it is desirable to adopt every reasonable and effective means for promoting an adequate and well balanced development and improvement of every part of the nation's railway system.

There seems, however, to be developing two clearly defined schools of thought regarding the means that should be adopted for accomplishing this result. Both recognize the desirability of equalizing the net returns of individual railways and of groups of railways as nearly as this may fairly be done. They differ widely, however, as to the means that should be adopted to make more nearly equal the percentages secured on valuation or property investment. On the one hand are those who would try to equalize the percentages of net return received largely regardless of what different railways actually earn. On the other hand are those who would adopt means to more nearly equalize the opportunities of different railways and groups of railways to earn net returns, and then let individual railways, excepting perhaps the most prosperous, have all that they earn and only what they earn.

Various plans for making net returns more nearly equal, after they have been earned, have been proposed. The one that has received the most discussion is the Potter plan. Its advocates premise their arguments largely on the need for greater unification and co-ordination of the railways. Perhaps it is not without significance that these same words were constantly used by W. G. McAdoo in outlining the policies he believed should be followed in the administration of the railways. His policies were not notably successful.

The Potter plan as applied to the western railways does not emphasize, and indeed largely ignores, the responsibility and duty of the Interstate Commerce Commission, as set forth in the Transportation Act, to so fix the rates of each large group of railways as to enable the group to earn a "fair return" on the aggregate value of its properties. The Potter plan provides for a 5 per cent advance in rates, which would not be sufficient to enable the railways of the group in the aggregate to earn a fair return. It proposes a division of all the resulting increase in freight revenue among railways earning less than $5\frac{3}{4}$ per cent on their property investment in proportion to the extent to which they fail to earn this much. While nominally this would be a pooling and division of an increase in total operating revenues, it would be in effect a pooling and division of net operating income, and it would not be an attempt to equalize the net returns *earned*, but a re-distribution of part of them after they were earned. The plan is based largely on the theory that the existence and well-balanced development of all the railways is essential to the public interest; that it is also essential to the welfare of all the railways, since the "strong" lines derive a large part of their traffic from business developed by the "weak" lines; that in consequence the stronger lines cannot rightfully claim the right to retain all the net operating income their accounts indicate they have earned, even though less than $5\frac{3}{4}$ per cent; and that it will be to the interest not only of the public but of all the railways to have a certain part of the operating revenues earned pooled and distributed as contemplated by the Potter plan.

It is plainly true, as contended by advocates of the Potter plan and of other methods of equalizing the percentages of net return received by different railways, that

the Transportation Act contemplates a policy of regulation which would tend to make less unequal the percentages of net return of different railways. But the act indicates clearly the ways in which its authors believed this should be done. First, it provides that the rates of the railways as a whole or by groups shall be so fixed as to enable them, as nearly as may be, to earn a fair annual return upon the aggregate value of their properties. The Interstate Commerce Commission decided that for rate-making purposes the railways should be divided into three groups. This having been decided, the provisions and spirit of the law plainly require that the rates of each group of railways shall be so made as to enable the railways of that group as a whole to earn a fair return; and when this has been done the percentages of net return earned by the railways of the three large groups will be approximately equalized.

Most of the freight business moves over two or more railways and much of it over lines in two or more of the large groups. This makes necessary the division of the through rates between the railways. The Transportation Act recognizes the fact that divisions of rates made by the railways themselves may be unfair and that this will affect inequitably the net returns earned by different railways. Therefore, it empowers the Interstate Commerce Commission to fix fair divisions when the railways fail to do so and thereby gives it an important means of equalizing the net returns earned. The commission used that means in the New England's division case, with results with which all railway men are familiar. It can use it in innumerable other cases. It can use it in cases where one of the railways concerned is a large weak road and another is a large strong road. It can use it in cases where one railway is a large road and the other a short line. The commission has authority also to further equalize total net earnings by changing freight car per diem rules if it thinks this reasonable. It now has a case before it which has been brought by the American Short Line Railroad Association to secure changes in parts of the existing per diem rules which the short lines regard as unfair.

The Transportation Act provides for further equalizing net operating income by authorizing the recapture of one-half of annual net operating income in excess of 6 per cent. If the rate-making provisions were so carried out as to enable the railways of each group to earn a fair annual return, the result would be that all but the strongest lines in western territory, for example, would get an increase in net operating income all of which they would be allowed to keep, while the strongest lines would get an increase in net operating income, part of which they would have to give up.

Finally, as another means of equalizing net returns, the law contemplates the consolidation of "weak" and "strong" roads into a limited number of continental systems of substantially equal earning capacity.

It is contended there really is no difference in principle between plans which contemplate, in effect, taking net operating income from some roads *after it has been earned* and giving it to others, and methods tending to equalize the net operating income actually earned such as those provided for by the Transportation Act. The *Railway Age* believes there is a difference of the greatest and most vital importance. This difference is that the plans for re-distributing net operating income *after it has been earned* largely disregard the extent to which the net return earned by a railway is determined by the way it is managed, while the methods provided by the Transportation Act do fully recognize the extent to which the net return earned by a railway is determined by the way in which it is managed. The former plans tacitly assume that the wide differences between the net returns earned

by different railways in the same territories are due mainly or almost entirely to conditions that have been and still are beyond the control of their managements, and that, therefore, unfavorable conditions should be offset by giving the railways suffering from them money that they do not earn. The plan of the Transportation Act assumes that management has much to do with net financial results, and that, therefore, opportunities to earn net return should be made as nearly equal as practicable, and that then each management should be stimulated to do its best by the knowledge that its railway will be allowed to keep all it earns up to 6 per cent, and one-half of all it earns in excess of this.

It is hard to understand how there can be any doubt in the mind of any man familiar with the history of the railways of the United States as to which of these views is correct. Will anybody familiar with that history say there have not been as wide differences in the ability with which railways have been managed as in the ability with which all other kinds of concerns have been managed? There have been wide differences in the ability with which the same railways have been managed during different periods. There are differences in the ability with which railways are being managed now. To the differences between the ways in which railways in the same territories have been financed, developed and operated in the past the differences between the financial results they are now getting are more largely due than to all other causes combined. Why have not all railways been equally well managed? Simply because their stockholders have not elected equally able directors, and their directors have not elected equally able executive officers. Is there anything surprising in this? Has not the same thing been occurring in the government of countries and the management of business throughout the entire civilized history of mankind?

That some railways have been more ably managed than others has not injured but benefited the public. It has involved a variety of policies and methods and caused inequality of results. The inequality of the results secured has been observed, the methods by which superior results have been obtained by some railways have been studied by officers of other railways, and in consequence every improvement in the management of any individual railway has tended to cause similar improvement in the management of all the other railways. What the Interstate Commerce Commission once called the "healthy rivalry and striving" between the managements of all railways in their efforts to get as good results as those obtained by the most successful is what has caused the unparalleled progress of the railways of this country in efficiency and economy of operation.

Now, regulation or co-operation between the railways which seeks to give each of them a fair opportunity to earn a fair return will not impair the incentives to efficient management and will not interfere with but stimulate continued progress in improving the properties and increasing the efficiency of service and economy of operation. But the one incentive to good management which is far more powerful than all others is the opportunity which always has existed and still exists for the ablest management to earn net returns larger than those secured by less able managements and to pay them out in interest and dividends to the security owners of the railway having the superior management. How it can be believed by reasonable men that taking net operating income from a railway which has earned more than the average return, and giving it to a road that has earned less, will not weaken the most important of all incentives to superior management, and thereby retard all progress in efficiency of management, is extremely difficult to understand.

If the opportunity, by superior management, to earn

and keep relatively large profits is not the most powerful and most indispensable incentive to progressive and efficient management of business, then all those who defend our present economic system are wrong and the socialists who seek to destroy it are right. This paper will never agree that this incentive can be safely impaired and destroyed in the railroad business until it is convinced that public ownership and management would be superior to private ownership and management of railways; and when it is convinced of that it will be convinced of the expediency of adopting the socialist principle of public ownership and operation of all property "for service and not for profit."

We now refuse to accept that principle because we believe the private management of business, with the opportunity for making profits, results in the public getting better goods and services at lower costs than it would get under any other system. If this is true as to business in general, it is true as to the railroad business in particular, and those who advocate a different principle in the regulation and management of railways are advocating a change in their regulation and management which soon would result in the public getting a poorer railway service at a higher cost.

Missouri Pacific Studies Front End Design

EDITORIALS in the *Railway Age* under the captions "Front End Needs Watching," November 7, 1925, issue, and "A Mystery in Locomotive Design," November 28, 1925, issue, both cited the recent experience with a new Missouri Pacific three-cylinder locomotive which required certain changes in the front end arrangement at the Altoona test plant before satisfactory steaming results could be secured. It is to the credit of the Missouri Pacific management that these tests were made and the test results subsequently provided for publication. The difficulty of predicting exactly what type of front end will best suit a given class of locomotive is generally admitted, and subsequent adjustments are almost always necessary.

That the mechanical department of the Missouri Pacific is alive to the importance of front end design is evidenced by the recent establishment of facilities for making locomotive road tests under an engineer of tests. One of the first activities of this newly established department was to undertake tests to establish the most economical front-end arrangement for a given class of locomotive with a view of establishing a standard arrangement for that class, and eventually for each class of locomotives.

Many variables enter into the question of front end design. The general principle being followed by the Missouri Pacific is that there is a proper relationship of open nozzle tip and stack size and setting for any given class of locomotive using the regular fuel supply from a given field and, when once installed, this front end setting must be adhered to without resort to bridges or projections of any kind placed in or over the nozzle tip. It is felt that the application of bridges or projections may be abused to such an extent that their use is entirely prohibited. The instructions are to look for and correct the troubles elsewhere, if the engine is reported not steaming, rather than to bridge the nozzle. To take care of extreme differences in fuel or seasonal changes in weather, the nozzle tip is enlarged or reduced in area to take care of the change in conditions.

The front end arrangement in the average locomotive of today represents a compromise to insure steaming regardless of over-all locomotive efficiency. One hundred

per cent boilers and superheaters, feed water heaters, stokers, brick arches, syphons, boosters and various other accessories have been experimented with or adopted in order to increase the capacity and over-all efficiency of the locomotive, but all these improvements and refinements are rendered non-effective if locomotives develop excessive back pressure due to improperly designed or proportioned front end draft appliances.

To anyone who has gone into the subject of front end standardization it is evident that there is much room for improvement along these lines and that joint research in this field by the American Railway Association would doubtless result in the development of general principles, proportions and relationships the knowledge of which would be of material benefit to the individual roads.

The Reading Bus Case

IT becomes increasing evident that the investigation which the Public Service Commission of Pennsylvania is conducting with reference to the application of the Reading to operate buses in that state will be probably the most searching yet made. Two hearings have already been held at Harrisburg, as reported in the *Railway Age* of December 5, and January 9, and another will be held on February 11. Nor is it evident that this will be the last; the commission has stated that all interested parties will be given an opportunity to present their views.

So far the main opposition has come from interurban trolley lines serving the same territory. The character of the objections they raise in this case are probably fairly typical of those which may be raised by others in similar situations elsewhere and a brief notice of them may be helpful. In the first place, they want the assurance that the railroad buses are not going to stop at every street corner to take on or discharge passengers. The Reading has given this assurance; it plans to stop its buses only at points on the highway corresponding to existing stations on the railway.

The railroad plans the installation of more bus trips than train trips to be taken out of service. To this strong objection has been raised, on the ground that more frequent service will make the bus more of a competitor to the trolleys than train service is. To this contention the obvious answer of the railroad is that, while it looks on its bus as a substitute for the money-losing train, the bus does not hold as many people as a train and consequently more trips have to be provided to take care of the same number of passengers. In the Reading's case also, where buses are used to parallel branch lines, meeting trains at main line junctions, it is planned to have branch line buses connect with virtually all main line trains, instead of only a few of them as is the case with the branch line trains. This the trolley lines contend is additional service; the railroad asserts that it is only supplementary service provided to put its branch line service somewhere near on par with its main line service. It is pointed out that before the advent of the trolley the railroad had sufficient passengers to justify it in operating branch line trains on the same frequency that it now proposes to operate buses. If the railroad bus lines should take some business away from the trolleys, it would only be regaining traffic previously lost by the railroad to the trolley lines.

Another objection arises on the subject of fares. As a general rule the railroad plans to charge virtually the same fares on its buses as on its trains. In such cases these are, generally speaking, higher than the trolley rates. However, in some cases where the bus route is considerably shorter than the railway route a lower fare

would be charged which, also in some cases, would be lower than the trolley fare. This the trolley lines object to, and also to the railroad's plan to make some of its bus routes considerably shorter than its rail routes. They contend that these shortened routes constitute an invasion by the railroad of new territory, rather than using the buses merely to substitute for trains. The answer of course is that common sense must dictate the selection of highway routes. The buses must run where there are roads and, to meet the public convenience, they should run on the best surfaced and most direct roads. They cannot run where no roads are provided and, to require them to follow poor and circuitous thoroughfares merely to increase their route mileage to equal the rail line mileage would be the *reductio ad absurdum* which probably the trolley companies themselves would not feel like pressing too far.

Opposing testimony on these permits has thus far been limited to individual trolley lines and one or two independent bus operators. But the electric railway association of the state also wishes to be heard on the general principles involved. Another point, apparently, is that it will be necessary for the railroad to present rather detailed figures bearing on the comparative cost of steam, rail-car and highway service. Some of the trolley people evidently are not convinced that rail motor cars would not be as adequate in solving the railroad's problem as would motor buses. Moreover, it seems that the railroad will be required to give definite figures regarding the nature of existing traffic, earnings from it and costs—in other words, it will be asked to demonstrate just how serious the loss of traffic is and to what extent the adoption of the motor bus would alleviate matters. All told, railroad officers who may be called upon at some time in the future to go through the same sort of process that the Reading now is will be the better prepared by having available the data brought to light in the present case.

A List of New Books

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Blockade Running During the Civil War and the Effect of Land and Water Transportation on the Confederacy, by Francis B. C. Bradlee. "The Railroads and the Confederacy," pp. 168-291, will be interesting as a record of war operation, and as a convenient source for data on travel-time of the '50's and '60's and other items of historical interest. Illustrated from photographs of old equipment and portraits, and contains references to official documents and other source material. The sections on telegraphs, pp. 291-310, and the Southern Express, pp. 311-315, may also be of interest. 340 p. Pub. by Essex Institute, Salem, Mass. \$7.50.

Brunel and After—the Romance of the Great Western Railway, by Archibald Williams. A well-illustrated history written in popular style. 205 p. Pub. by Great Western Railway, London, Eng. 1 shilling.

Bus Operating Practice, by Roy Hauer and Geo. H. Scragg. Discusses present status of bus transport, operating methods, cost analyses and devotes much attention to requirements of state commissions. 260 p. Pub. by International Motor Company, New York City. \$3.

Census of Manufactures, 1923, by U. S. Bureau of the Census. Summary for the U. S. by industries, geographic divisions and States. Group 14 comprises "Transportation equipment, land, water and air," and Group 15, "Railroad repair shops" in the statistical tables. 139 p. Pub. by Govt. Print. Off., Washington, D. C. 15 cents.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Laboratory vs. Practical Tests

GREENWICH, CONN.

TO THE EDITOR:

I wish to take the liberty of suggesting that it is just possible that some of the mechanical officers of our railroads are giving an undue importance to the value of laboratory tests. I recently asked one of them to apply a device to a locomotive and try it out. His answer was that it would take at least six months to make a proper test of the device and the testing department was at least one year behind its schedule. I told him that if he would put it on a locomotive and put the locomotive on the road he could tell in two days whether it was worth while to refer it to the testing department at all. He said with a smile: "We might have a locomotive failure" and the smile meant more than his words.

In another test department I was shown a schedule of work ahead which would require at least three years to complete.

Dr. Johnson once said: "Miserable beyond all names of wretchedness is that unhappy pair who are doomed to reduce beforehand to principles of abstract reason all of the details of each domestic day."

It seems to me that there is a tendency on the part of some people to try to "Reduce beforehand to principles of abstract reason all of the details of each domestic day."

"The successful engineer is the one who knows when a job is done good enough."

CLEMENT F. STREET.

Fuel Association Policy

CHICAGO, III.

TO THE EDITOR:

At a recent meeting of the executive committee of the International Railway Supply Men's Association, some very favorable comments were made on an editorial appearing in your issue of October 10, under the caption, "A. S. M. E. and the Railroads."

Our association is interested in the emphasis the *Railway Age* has placed upon the gradual elimination of mechanical engineers and former railway men from the programs of the mechanical associations. It is our assumption that your editorial refers particularly to the A. R. A. since it is the policy of the International Railway Fuel Association, with which we are associated, to encourage the active co-operation of mechanical talent from the supply organizations.

The International Railway Fuel Association has quite a number of representatives of manufacturing concerns on its various standing and special committees, and it is customary to have papers by supply men of conspicuous technical ability in the proceedings of the association. This policy is prompted, we believe, by the thought that the association could thus obtain the full benefit of the

research work in which the supply industry is continuously engaged.

In writing you, the association is prompted by the desire to make known the close co-operation between the Railway Fuel Association and our own. This mutual understanding between us has, we believe, resulted in building up one of the strongest and most important gatherings of railway men in this country.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOC.
EARL E. THURLIN,
Assistant Secretary-Treasurer, Executive Committee.

First Come, First Served

NEW HAVEN, Conn.

TO THE EDITOR:

In connection with the increasing use of automobile buses and rail cars the capacity of which is somewhat rigidly limited, the following device which is used to some extent in Europe in order to eliminate crowding and possible injustice to the less enterprising prospective passengers at locations where the demands may be in excess of the carrying capacity, may be of interest to your readers.

At locations where relatively large numbers of people gather to board the buses, there is attached to a convenient post a pad of small sheets of paper which are numbered consecutively. Each prospective passenger upon arrival tears off a sheet of paper, which indicates automatically the sequence of his arrival, and when the bus or car appears those holding the lowest numbers are admitted in preference to the later arrivals.

This method apparently eliminates all crowding, and might well be introduced at some points in this country.

SIDNEY WITTINGTON,
Electrical Engineer, N. Y., N. H. & H.

The Locomotive Whistle— What Are Its Purposes?

DENVER, Colo.

TO THE EDITOR:

There is much food for thought in Professor Foley's very able article, "A Study of Locomotive Whistles," published in the December 5 issue of the *Railway Age*. No doubt several questions will arise in nearly every railroad man's mind when he reads the article, some of which I venture to say will be:

1—Do we want all the sound thrown ahead at other times than when whistling approach warnings? Remember the men on the rear of long trains have to get some whistle signals.

2—Could separate whistles be used for forward and rear signals, or a pivoted reflector used to throw the sound where wanted?

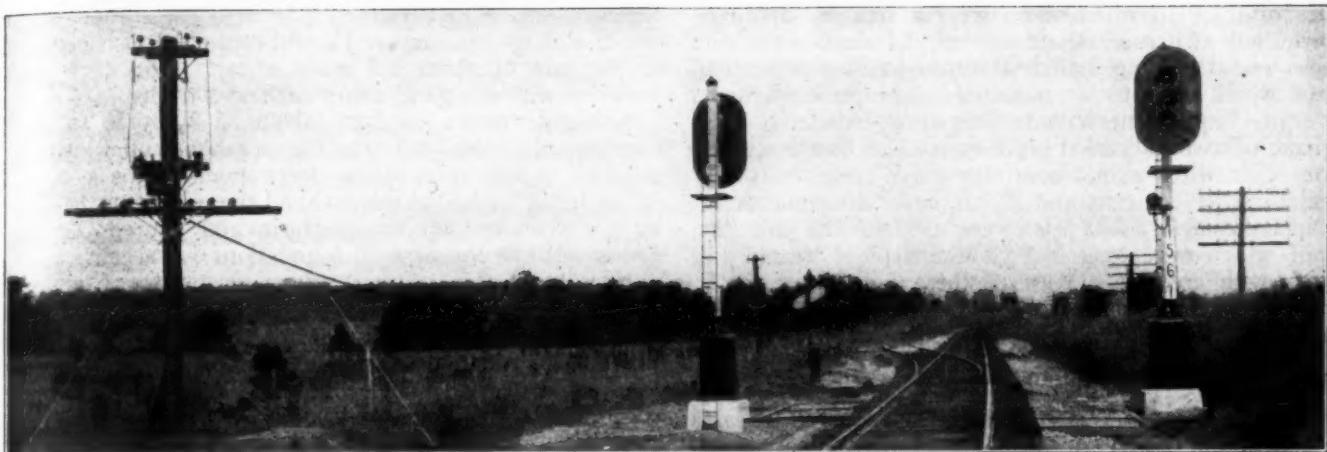
3—The superior carrying and startling qualities of a high pitched whistle admitted, would we railroad men be as safe if passenger, freight, helper, and switch engines had identical whistles?

4—If whistles are placed in front of the stack, what will the enginemen have to say relative to additional steam clouds about the front end in cold weather?

5—Is the locomotive whistle of sufficient importance in warning automobiles to adapt it to the one purpose to the exclusion of its other legitimate uses?

Professor Foley's recommendations are really worth some serious consideration. It is hoped that there will be open discussion outside of state legislatures first.

F. W. CURTIS,
Supervisor of Safety and Fire Prevention, Denver & Rio Grande Western.



A Double Location at a Siding

Automatic Signals Constructed in Record Time on Seaboard

Contractor installs 254 miles of color-lights on single track in about 150 working days

AN unusual record for speed and efficient construction is being made in the installation of alternating current automatic color-light block signals on 234 miles of single track and 20 miles of double track on the Seaboard Air Line between Richmond, Va., and

From 200 to 250 men were employed on the signal construction and from 100 to 200 on the pole line construction throughout the period from August 18 to December 1. As a result of the co-operation of all concerned the first section of signaling from Raleigh, N. C., to Kittrell, 36 miles, was put in service on December 18, 108 working days after the beginning of actual work in the field, and the section from Kittrell to Norlina, 23 miles of single track, was cut in on December 31. The signaling between Raleigh and Hamlet, 20 miles of double track and 78



Concrete Foundations Were Made on a Large Platform at Raleigh

Hamlet, N. C. The contract for the materials and the construction of the signaling was awarded to the Union Switch & Signal Company on July 24, 1925, and contracts for the pole line construction were awarded to two other organizations on August 5. The Union Signal Construction Company, a subsidiary of the Union Switch & Signal Company, which handles the field construction, established headquarters at Raleigh, N. C., on August 8, and started a force of men at work about August 11.

Materials for concrete signal foundations began to arrive on August 10, the first car of signal apparatus was unloaded on August 12, and the first poles were received on August 13. Digging for the pole line was started on August 10.



Two and a Half Miles of Track Was Drilled and Bonded a Day

miles of single track, is to be placed in service about February 1, and the remaining 98 miles of single track from Norlina to Richmond is to be completed by February 15.

The signal installation includes 234 road miles of single track and 20 road miles of double track, or a total of 254

miles of track in which there were a total of 247 non-interlocked switches, 50 crossovers, 82 derails on side tracks and 18 siding switches within fouling protection, all of which were to be protected. The principal items of signal equipment include 388 three-indication high signals, 65 two-indication high signals, 25 dwarf signals, about 475 switch circuit controllers, 1,575 a.c. relays, 11 special cantilever masts and 27 cantilever attachments.

Approximately 8,700 poles were used for the pole line, all of which were long leaf Southern pine, treated full length with creosote. Most of these poles were 22 ft. long, longer lengths up to 60 ft. being placed near highway crossings and through station grounds.

Fast Program of Manufacture and Delivery of Materials

Competition was keen for the contract for the signal installation; therefore the manufacturer could not logically manufacture much of the material ahead of time. With the awarding of the contract on July 24, the Union Switch & Signal Company organized its factory facilities to manufacture and ship approximately 40 complete signals, including relays, ladders, etc., each week, which program was carried out until the bill was completed, the first car being shipped on August 8. The cars were loaded at Swissvale (Pittsburgh, Pa.) on Saturday of each week and delivered at Raleigh, a distance of 632 miles, after an average period of six days enroute.

On arrival at Raleigh the loaded car, together with an empty car, was spotted alongside the platform of the signal company's warehouse. As the car was unloaded certain materials were taken into the warehouse, while others were transferred into the other car and tagged in order of distribution to locations or stations along the line. This system reduced the amount of handling and trucking.

The concrete signal foundations, the relay cases, the signal poles and the light-signal heads were distributed by work train to the signal locations, the pre-cast foundations being set by a wrecking crane. The insulated wire, trunking, stakes, etc., were forwarded by local freight trains to crew headquarters or to certain stations, and hauled out to the signal locations on motor cars. As a paved highway paralleled a considerable mileage of the installation, two trucks, one a Ford and the other a two-ton Pierce-Arrow, were used continuously for rush delivery of materials. Long distance telephone connections were maintained between each crew headquarters and the office at Raleigh. Information concerning a material shortage could be given by 'phone and special delivery made by truck on short notice.

Signal Company Construction

Organization Gets Started

The signal construction was directed by J. F. Talbert, superintendent of installations for the Union Signal Construction Company, who arrived in Raleigh on August 11, and immediately proceeded to construct a floored frame building for use as a warehouse and office alongside a house track. This building, constructed on wooden posts, was 30 ft. by 60 ft. in area, having a shipping platform on the 60-ft. side, the floor being on a level with the floors of cars on the house track. As the signal company had several other important contracts under construction when this contract was awarded there was only one foreman available. Without reducing any of the other crews Mr. Talbert built up an efficient organization of 50 men in two weeks and eight foremen and a crew of 250 men by October 15.

A bonding crew of four drillers, four bonders and one

foreman, using four Everett power drills, started north out of Raleigh on August 11, and continued to Richmond at the rate of about 2.5 miles a day. This crew was provided with one gang motor car and a trailer.

A heavy wooden platform, about 25 ft. by 50 ft., was constructed in the yard near the storehouse on which the concrete signal foundations were poured, the concrete mixer being located at one end and the mix being handled by wheelbarrows up the platform and poured into the forms. While the first 50 foundations were being made during the week of August 17, another crew of laborers was digging the holes for 50 signal foundations. On August 24 and 25, the first work train was operated to set these foundations, distribute the corresponding relay cases, signals, ladders, poles, etc. The digging crew continued to dig holes for the foundations and the concrete crew of 6 men at headquarters made about 10



A Typical Substation for A. C. Power Feed

foundations a day. Whenever 50 foundations were ready, a work train was run to distribute these foundations and also the signals.

Crew Organization Completes Installation

Having set the concrete signal foundations and distributed the signals, the remainder of the work was completed by separate crews. With a storehouse and headquarters at a town near the middle of a 40-mile section, a crew of from 25 to 40 men and a foreman proceeded to complete each item of construction in the order that the materials were received. Each crew was furnished with a gang motor car and trailer.

The first work was to erect the relay cases, signal poles and signal heads. The wooden stakes and trunking, together with the track wiring and bootleg connections, came next. The switch circuit controllers and shunt wires to the rails were installed at each switch. Simultaneously the wiremen connected the wires in the relay cases and the linemen made the line cables and connected the line taps. The line transformers, lightning arresters and fuse cut-outs were mounted on the poles at a later time on account of delay in receiving materials. As soon as the power line was completed the final adjustment and test-

ing of signal control circuits was finished within a few days and the signals were ready for service.

Work Accomplished in Store-room and Shop

In addition to unloading, checking and distributing materials the headquarters crew, located at Raleigh, had numerous other duties to perform. The wiring for each relay case was so arranged that the terminal board, with terminals and lightning arresters, could be wired up at headquarters and marked for distribution, together with the circuit plan, to each signal location. This innovation in signal construction saved a great deal of time in the field.

The switch rods were changed out by the railroad



Poles Were Set in Holes by a Derrick Mounted on a Flat Car

company's forces and shipped to the signal company's blacksmith shop at Raleigh where a half-inch section was sawed out, the ends drilled and the insulation and straps bolted on to insulate the rods. Motor car repairs, special signal fittings and other blacksmith and machine work, were also handled in this shop. The equipment included a power hacksaw, two drill presses, an emery wheel, a buzz saw, two anvils and the necessary tools. The machines were driven by a 3-h.p., type Z Fairbanks Morse gasoline engine, belt-connected to shafting with an additional engine held in reserve. In order to provide a convenient gasoline supply for the motor cars, gas engines, trucks and concrete mixer the Standard Oil Company installed an underground tank and filling stand for the use of the Union Signal Construction Company.

As a part of the headquarters organization a special crew of four men was assigned to install and connect the power transformers, the power switchboards and cutouts at the seven substations where a.c. power was supplied to the signal system from public service connections. Switchboards and power transformers were furnished by the General Electric Company. The substations, of brick construction 12 ft. by 12 ft. in area, with concrete floor and roof, were furnished by the railroad.

In order to check materials and handle the correspondence and the pay-roll for such a large installation a special office force was required, including a draftsman, a material clerk, a pay-roll clerk, a paymaster and a stenographer. All men were paid in cash, while at work in the field, every two weeks.

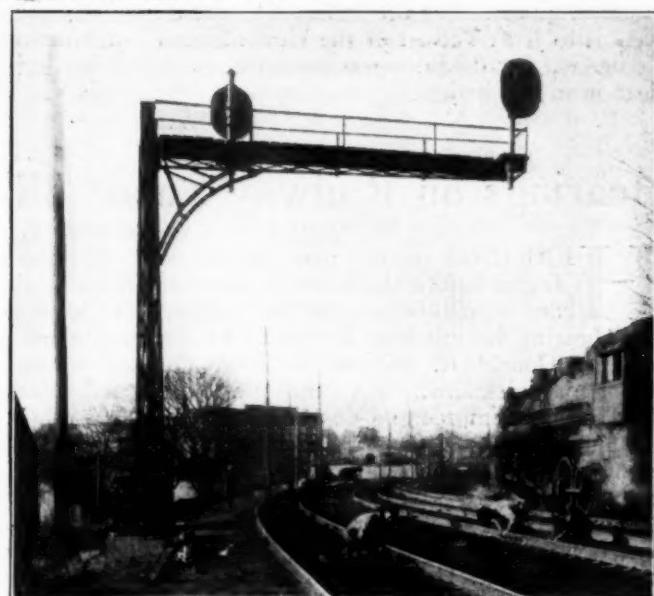
262 Miles of Pole Line Built in 120 Working Days

The contracts for the pole line construction were signed on August 5, the section of 98 miles from Richmond to Norlina being awarded on a straight contract basis to

R. H. Bouligny, Inc., Charlotte, N. C. The section of 155 miles from Norlina to Hamlet was handled by the Gibbs & Hill Company, New York, on a cost-plus basis. The 8,700 full creosoted poles, spaced for a 175-ft. span, were purchased through the Western Electric Company under inspection by the Robert W. Hunt organization. The first car of poles was received at Norlina on August 8.

R. H. Bouligny, Inc., started digging holes about August 12, and initiated the practice of providing dining and sleeping quarters in tents in the field as near as possible to the work. As soon as the holes had been dug for a few miles, the poles were unloaded from cars in a work train and set in the holes by means of a gas engine hoist and boom, mounted temporarily on a flat car. The Gibbs & Hill Company followed the same methods.

A 4-ft. 2-pin creosoted cypress cross-arm was mounted near the top of each pole to carry the two No. 4 twisted aluminum steel-cored conductors for the 4,400-volt feed. R. Thomas & Sons' No. 31 porcelain insulators, with wooden pins, were used for this circuit. An 8-ft. 6-pin creosoted cypress cross-arm with steel pins, wooden cobs and glass insulators was mounted 7 ft. below the top arm to carry the 110-volt signal control wires. The majority of the pole line hardware was furnished by Hubbard & Company, Pittsburgh, Pa. The line was well



Two-Indication Signals in Yard Limits, Mounted on a Cantilever Bridge

guyed at all curves and storm-guyed four ways about every half mile. Over certain bridges and viaducts it was necessary to put the line circuits in cable, and a total of 3,800 ft. of the line was so constructed.

The pole line from Norlina to Raleigh, 98 miles, was completed and the power turned on on November 19, 84 working days after the start. The section of pole line from Raleigh to Hamlet was completed on December 30.

The check-off system of progress report form was used with a column down one end, including rows for each item of pole line and automatic signal construction. With a track plan at the top of the chart, a column was drawn for each mile of road. Therefore, when any particular kind of work was completed on a certain mile this block of space was colored or crossed off in a code for each week. At the end of each week Mr. Talbert sent such

a report to the signal engineer's office and P. G. Bodwell, chief signal inspector, sent a report covering the progress of pole line construction. Each report was copied on the master report, and then Mr. Talbert's report was filled out to show the progress on pole line construction and likewise Mr. Bodwell's report was marked to show the signal construction. These reports were then returned to the respective men so that they could have a record of how the job as a whole was progressing and know what item should be taken care of next to make the best progress.

Six inspectors reported to P. G. Bodwell, the chief signal inspector for the railroad. Their duties were to follow up certain items of construction and to instruct the section foremen as to the proper methods of installing insulated rail joints. These inspectors became somewhat familiar with the signal system during the construction, and it is the plan to assign them as maintainers on the completion of the construction.

It is the intention that this article should cover only the construction methods used. An article to be published later will give a description of the circuits, the unique features of the signaling and some of the results secured in bettering train operation by means of the signals.

This signal construction was handled under the general supervision of M. H. Cahill, operating vice-president of the Seaboard Air Line, and under the direct supervision of W. D. Faucette, chief engineer, and F. H. Bagley, signal engineer. We are indebted to these gentlemen, as well as to J. F. Talbert of the Union Signal Construction Company, for the information made available for publication in this article.

Hearings on Railway Labor Bill

WASHINGTON, D. C.

HEARINGS on the new railway labor bill were begun before the House committee on interstate and foreign commerce on January 26, the principal hearing having been concluded by the Senate committee. Donald R. Richberg, counsel for the railway labor organizations, was the first witness before the House committee and described the provisions of the bill and predicted that it would bring about a period of harmony between the railroads and their employees. He said that most of the bill could have been put into an agreement between the roads and the organizations but that it was necessary to have a law to establish the required tribunals. He referred to the proposed emergency commission to be appointed by the President in case of a threatened strike as a sort of "super-board of mediation," which it was hoped would be able to bring about some kind of agreement between the parties and not merely publish a report. He also read a letter from Ralph M. Easley, chairman of the executive council of the National Civic Federation, approving the bill heartily. It is reported that the organizations opposing the bill in its present form have been trying to enlist the support of the farm organizations and that representatives of the American Farm Bureau Federation and others may appear to ask amendments.

Mr. Richberg appeared again on January 27 and replied to questions put by members of the committee. He also announced that an agreement had been reached on an amendment to suit the wishes of the electric railways and their employees, providing that the term carrier as used in the bill shall not apply to any street, interurban or suburban electric railway unless such railway is operating as a part of a general steam railway system of transportation, but shall not exclude any part of the general

steam railway system of transportation now or hereafter operated by any other motive power. He was to appear again before the committee on the following day.

The Senate committee had expected to hear Chairman Hooper of the Railroad Labor Board but it is understood to have now decided that it is not necessary.

Another brief hearing on the labor bill was held by the Senate committee on interstate commerce on January 25 to give J. A. Emery, counsel for the National Association of Manufacturers, a chance to reply to the reply made to his former statement before the committee by Mr. Richberg. He denied that he was seeking to destroy the bill by introducing into it an unconstitutional amendment, as Mr. Richberg had charged, saying that he had taken part in the negotiations concerning the bill and was greatly disappointed that the parties had not agreed to make the emergency commission, to be appointed by the President in case of a threatened interruption of transportation, adequate to its task. He said he hoped the parties would be able to agree on a method of settling their disputes through mediation and arbitration but that something is necessary to meet the situation which experience indicates may occur again when they fail to agree, and that the bill abandons the forward step taken in the Transportation Act of setting up a body to decide a controversy when all machinery of arbitration or mediation has failed. The emergency commission may never need the power, he said, but it ought to have the power to require the production of papers and witnesses, because in case of such an emergency as to cause its appointment no board of arbitration would have been made acquainted with the facts and the board of mediation is given no power to collect information. He also asked for more specific language in place of that which provides that no change in the conditions out of which the dispute arose shall be made by the parties while the investigation is in progress, particularly in view of the other provision that nothing in the act shall make the quitting of his service by an employee an illegal act. He said he had no objection to an individual quitting in good faith but that the language used has no purpose in the bill unless it is meant to impair the judicial power to deal with conspiracy and to preserve the right to strike, possibly by many employees quitting together under the color of individual action.

Senator Couzens asked Mr. Richberg and Mr. Thom if they objected to giving the emergency commission power to compel testimony. Mr. Richberg said that the labor organizations object to the setting up of a board which would try to act like a court, such as the Railway Labor Board; what they want is that the commission shall try to bring about a settlement, "not to put a story in the paper telling who is wrong." Senator Couzens said he, for one, would not approve a bill which would not give the commission power to compel testimony and Senator Bruce said he was inclined to believe that was his position.

Mr. Thom said that the railway executives would have no objection to such a provision unless it would have the effect of destroying this movement for the adjustment of controversies. "Both sides," he said, "have surrendered things in order to get an agreement on this bill and that was one of the things that were objected to by labor and contended for by us. We think it more important for this bill to go through as written than to have it amended even as we might desire. The position of the executives is that it is preferable to have this bill than to have no agreement. This section 10 was perhaps the greatest bone of contention. They said that was the limit they would go and the executives had to decide whether to give up the movement or to accept this."

The Economies of Standardizing Purchasing Are Large

Ten per cent reduction in railway supply costs possible by application of business principles

By N. F. Harriman*

Vice-chairman, Federal Specifications Board, and Member, Federal Purchases Board, Bureau of the Budget, Washington, D. C.

AGREAT economic importance attaches to the employment of business principles in railroad purchasing. Thirty per cent of the gross receipts of railroads is expended in the purchase of materials, supplies and equipment. Over \$1,500,000,000 is spent annually for materials and supplies out of operating expenses alone. In addition to this, large sums are spent annually on capital account for additions, betterments and improvements to the physical plant. Exact statistics of consumption do not exist for most of the articles purchased, but the Bureau of Railway Economics has estimated that the railroads purchase directly one-quarter of the coal output of the United States and one-ninth of the total petroleum produced. Directly and indirectly they purchase approximately 30 per cent of the iron and steel output, and at least 25 per cent of the lumber produced. A very large, but indeterminable percentage of a multitude of other products is purchased by the railroads.

The late W. V. S. Thorne, director of purchases of the Union Pacific system and the Southern Pacific Company, once told the writer that on any large railroad or group of railroads a saving of from 5 per cent to 10 per cent could be made in the cost of railway materials, supplies and equipment through standardization and consolidated purchasing. It is believed that this is a conservative estimate at the present time.

Some of the large railroad systems have standardized their requirements, not only for equipment but for maintenance and other supplies, and have consolidated their purchases with economies both for original cost and operation which bear out this opinion. The possibility of effecting equal and greater economies on other roads would appear to warrant the most careful consideration by railroad officers, directors and bankers.

Care Needed in Changing Standards

In business, where existing practices and technique in many lines are in the melting pot for recasting and revision, the principle of standardization is playing an important part. It is in the background of practically all large and successful business enterprises in this country. Among technical problems of business administration, however, few are as important as those involved in standardizing purchase requirements and in effecting actual purchases in strict accordance therewith. It is of importance to both producer and consumer. In industrial standardization the user is ultimately benefited the most, although the immediate results are largely to the producer, for it not only simplifies his work but enables him to produce what is required by the consumer cheaply and expeditiously.

*The author of this article was formerly engineer of tests of the Union Pacific and subsequently assistant director of purchases of the Union Pacific and Southern Pacific railroads. At the present time he is co-ordinator for purchases for all activities of the U. S. Government.)

It is often urged that standardization stifles initiative and progress and that to adopt a standard prevents advance through improvements in the arts of manufacture. This is not true. A standard should remain standard only until something better is developed. It should not be changed until justified from all points of view. Any given standard, to achieve its object, must be well suited for the intended use in the majority of cases and good enough in all cases. Exceptional cases require special consideration, perfection will never be attained. Intelligent standardization presupposes a definite knowledge of the conditions of use of the material or article in question and a reconciliation of differences of opinion as to different qualities, grades and sizes. Standardization is largely a compromise, and must necessarily involve the sacrifice in some cases of personal preferences.

Standardization is not always understood in its true sense. It may be defined as the adoption of the best practice in the unification of the methods and processes of industry, of general business, or other lines of endeavor which involve repetition. It may be considered under several aspects:

Standardization of nomenclature enables purchaser, seller, and manufacturer to use and understand the same language. It is important to have concise definitions of terms used in specifications and contracts. This alone would greatly facilitate the efficient handling of purchases and deliveries to meet specific needs. Most specifications contain ambiguous language.

Standardization of variety, or simplification, involves the elimination of unnecessary types, shapes, grades, and sizes of manufactured articles. This permits a large saving through a decrease in deterioration, obsolescence and capital charges carried on idle stock of unnecessary material and products.

Standardization of dimensions ensures ready interchangeability of supplies, and the proper interworking of parts which may be manufactured or assembled by different manufacturers.

Standardization of specifications puts bids on an easily comparable basis, promotes fairness in trade competition, insures the proper grade of material and manufactured products for a given use. It is the most important phase of the subject from the purchaser's viewpoint. It is the first and most essential step in the economy that arises from the purchase of materials or products in large quantities, and is a necessary factor in the improvement of quality and the adaptation of quality to a definite use.

Economical Buying Demands Definite Specifications

The specification is the common meeting ground for the manufacturer, dealer, and user. It is at once a statement of the user's needs and what the manufacturer is required to supply. The specification should include limiting values

for the properties and dimensions necessary to meet the required service, with proper tolerances. A suitable specification is one which enables bidders to know exactly what is desired or required and what procedure the purchaser will follow to satisfy himself that the specification has been fulfilled. Defective and incomplete specifications, whether due to compromise of quality for temporary economy, or to lack of data, should be replaced by those in which each property involved is so specified as to predetermine the definite quality best meeting the need.

The writing of specifications is not a task that can be performed at any one time and be considered completed. A specification that reflects the best practice for one year may be found deficient from the standpoint of succeeding years. Satisfactory specifications are the result of growth and they must change from time to time, to harmonize with improved methods of manufacture and higher requirements of the users' service. They can be developed only as the area of definite knowledge expands.

It is a basic principle of purchasing that competition reacts to the benefit of the purchaser. Standardization restricts bidding to qualified bidders but expands bidding by fixing the minimum of quality to be attained. If competition is to be secured and maintained there must be a clear definition of standards so that bids can be made intelligently. The purchase of materials and supplies in accordance with well defined standards, understood and agreed upon by the purchaser and producer alike in the order or contract, is the only way by which they can be purchased successfully by competitive bids. With such standards, a purchaser is enabled to take advantage of this method in securing the lowest price that can be obtained for an article of the required standard. The great value and business importance of specification standardization from the standpoint of any large purchaser lies in consolidated purchases to a single standard specification for a given article. This results in economy.

The development of specifications for competitive bidding is not a simple problem. The difficulty is to frame specifications so as to secure all the advantages that flow from precision and definiteness without making them so voluminous and intricate as to discourage and restrict competition. The advantages of precise and definite specifications in the invitations to bidders are manifold. Standardized specifications are now recognized by purchasing officers as the proper basis for efficiency in purchasing, for they tend to secure for all similar needs the article which experience has shown to be the best for the purpose. By reducing the number of items to be purchased, they simplify the work of the purchasing office as well as that of the stores department—a matter of great importance on a railroad which uses more than 60,000 items of material.

Testing and Inspection Needed

In all standardization work two main factors must be considered, namely, what the standards should be, and how to render them effective. A specification of any kind is written to be enforced and it is of value only to the extent to which its provisions are enforced by fair and uniform inspection. Unless enforced, it is valueless.

It should be noted that standardization of materials and products does not necessarily influence quality. Standardization and quality are frequently confused in use, but they are not synonymous. Quality is a characteristic, whereas standardization is a process.

Standard methods of test and inspection are necessary parts of an ideal specification, but the testing of materials and products may prove to be needless waste of time, money and energy unless due consideration is given to the

nature of the tests applied, the conditions under which the tests are made, and the interpretation of results. Quality may be determined directly by a service test, indirectly by a test under simulated service conditions, or more indirectly by a laboratory test of the individual properties upon which the quality is known or assumed to depend. Inspection is judicial, because it is measurement plus judgment. A scientific test on the basis of an ideal specification becomes impersonal.

In the use of specifications, provision should be made for their revision. The sequence of events in connection with their application, use, and revision, is as follows: Original draft of specification, proposal, bids, order or contract, delivery, inspection and test, acceptance or rejection, storage, issue, observations on service and data for revision. This natural history of a specification thus comprises the entire cycle of events from the specification itself to the reports of service fed back for later revision.

Quality in the sense here used is that which fits a material for a given use. A material is not simply good; it is good for a specific purpose, and the word quality is meaningless apart from the use in view. Good quality means good for a definite use. The test of the material is to determine how good it is for that use and whether it conforms to the prescribed standard. The ordinary purchaser or user frequently is not an expert on the quality of products, and in many cases the quality can be lowered and he will be none the wiser until the material is put into service. Business is facilitated and the ground for commercial disputes between the purchaser and seller is narrowed if purchases are made on the basis of specified qualities understood by both purchaser and seller.

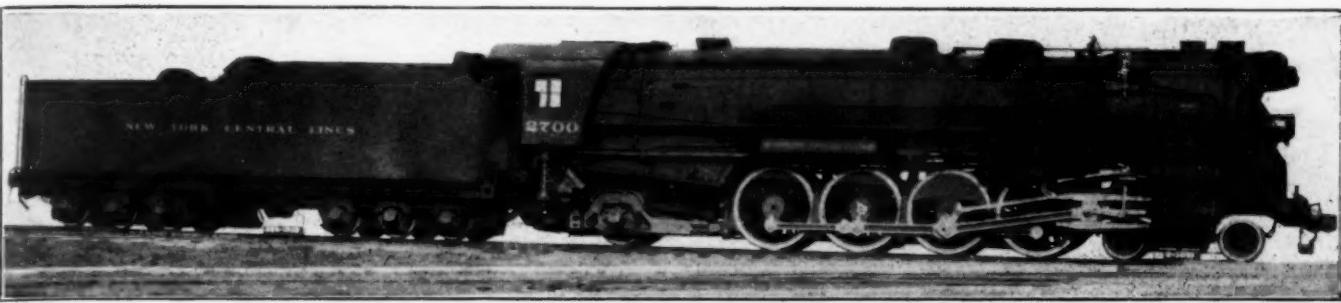
Quality Versus Price

One of the most difficult riddles of purchasing is the continual quarrel between quality and price. This situation can be cleared only by proper and adequate specifications. Purchasing by bids based on well formulated specifications really sets an upper and lower limit to the quality. The too-good is eliminated in the price comparison of bids, the too-poor is rejected by the minimum quality specified. The result is that the deliveries are of that quality, above and below which lies waste. Net utility per dollar expended is the criterion at which level this good-enough quality range should be set.

There are many reasons which should emphasize the desirability of basing purchases on properly standardized specifications. Lack of standards of quality for use in purchasing is unbusinesslike and costly. This can be corrected by purchasing on proper specifications, and followed up by adequate testing and inspection.



Polish Railway Station Rebuilt Since the War



Locomotive of the 4-8-2 Type Built for the New York Central by the American Locomotive Company

4-8-2 Type Locomotives for N. Y. C.

Designed for handling heavy trains over the Mohawk division between Albany and Syracuse

ABOUT ten months ago the American Locomotive Company delivered a 4-8-2 type locomotive to the New York Central for use in heavy freight service over the Mohawk division between the Selkirk engine terminal, near Albany, N. Y., and the Minoa terminal, located about eight miles east of Syracuse, N. Y. This division is a low grade line, the traffic requirements being

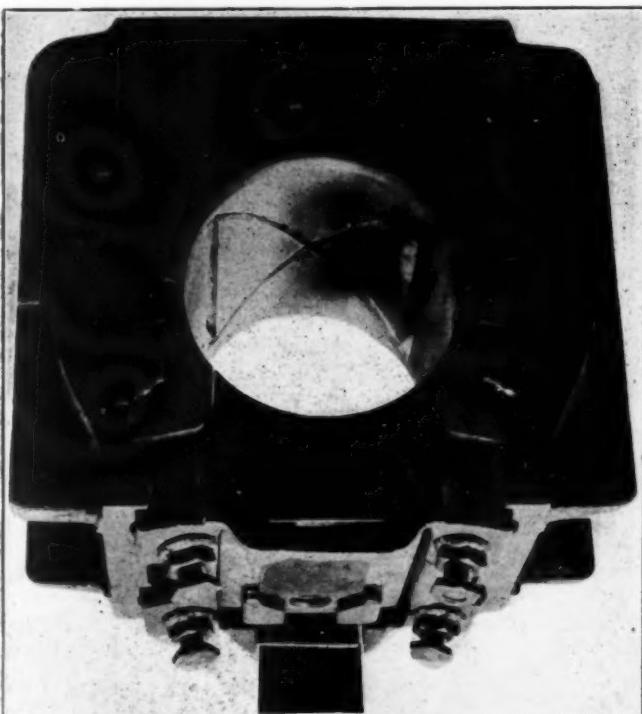
tained by the use of a boiler having ample proportions, a firebox of ample heating surface and volume, and the application of the latest design of feedwater heater and superheater, together with the application of a stoker. Driving wheels 69 in. in diameter were used instead of 63 in., as commonly used in freight service with a view better to meet the requirements of a river grade line. As a result of the performance of locomotive No. 2700, 99 locomotives of similar design have been ordered, making a total of 100 of this type, which will eventually be placed in operation on the New York Central system.

One of the problems in the design of modern locomotives is to secure a satisfactory distribution of the weight over the engine wheel base. Locomotive No. 2700, is equipped with an Elvin stoker and a trailer booster. The location of the Elesco feedwater heater in its customary place on the smokebox front in a measure tends to balance the concentration of weight at the rear end. The location of the two cross compound air compressors in front of the cylinders and the front end throttle, which is located in front of the stack, are further aids in improving weight distribution.

The designers have also assisted in obtaining a more satisfactory weight distribution through the construction of the engine truck. Referring to the elevation drawing, the reader will note that the truck center pin is 2 in. in the rear of the center line of the trucks and also that it is 6 in. back of the transverse center of the cylinders. This arrangement places a greater weight on the rear engine truck wheels than on the front which facilitates the guiding action of the truck and also shifts a greater proportion of the total weight of the engine on to the truck itself.

As shown in the table, these locomotives develop a rated tractive force of 60,000 lb. without the booster. With the booster an additional tractive force of 12,700 lb. is acquired, making a total of 72,700 lb. The total weight of these locomotives is 359,000 lb., of which 240,500 lb. is carried on the drivers, 58,000 lb. on the trailing truck and 60,500 lb. on the engine truck.

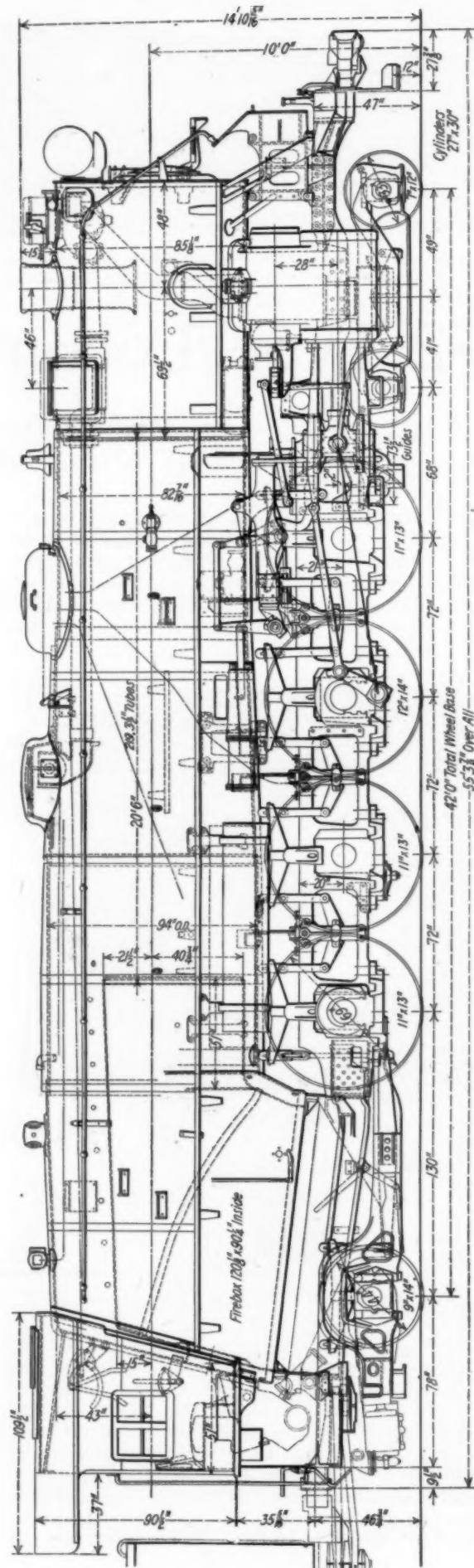
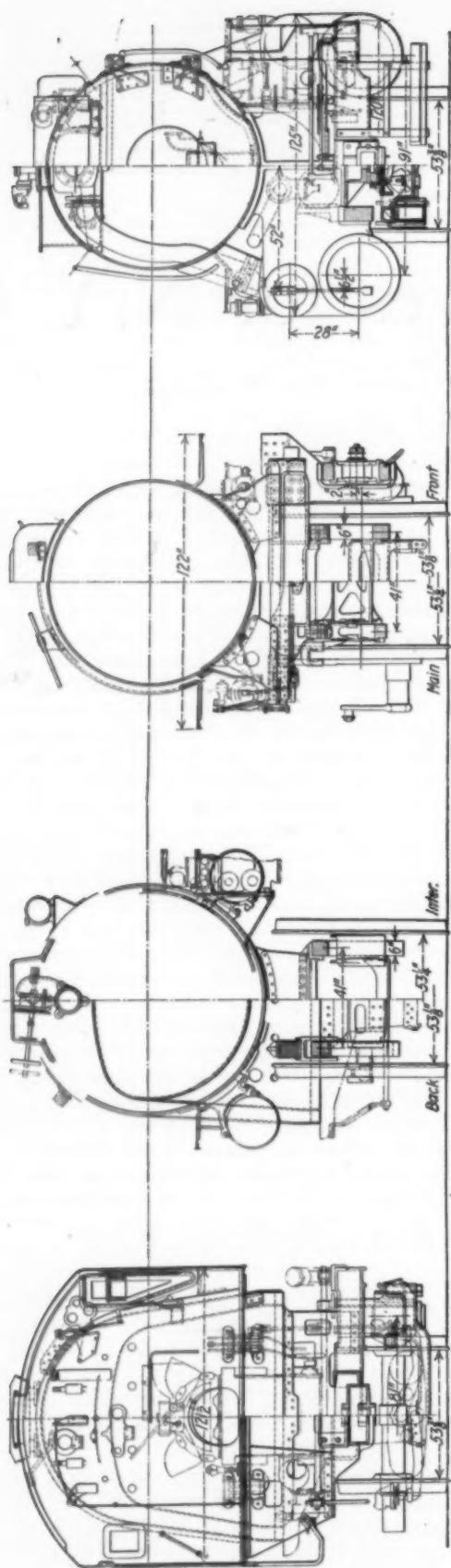
The boiler of these locomotives is of conical construction. As stated in a preceding paragraph, the design is of ample proportions which is an important factor in the increased capacity of these locomotives. The area of the grate is 75.3 sq. ft. The heating surface of the firebox and combustion chamber is 320 sq. ft. and the total evaporative heating surface of the boiler is 4,451 sq. ft.



View of Main Driving Box Equipped with Supplemental Bearings

such as to take a locomotive that will maintain a high sustained tractive force at speeds. To meet these conditions, locomotive No. 2700, was designed to handle maximum trains over this division at speeds corresponding to traffic requirements. No restrictions were placed by the railroad on the builders in the design of this locomotive, except to use as many New York Central standards as possible and to conform to certain axle loads.

The required maximum sustained horsepower was ob-



Elevation and Cross-Section Drawings of New York Central Locomotive No. 2700

The boiler is equipped with a type E superheater. The total superheating surface is 1,985 sq. ft., making a total combined evaporative and superheating surface of 6,436 sq. ft. Ready access to the unit bolts of the superheater is provided by a manhole located at the rear of the stack as shown in the elevation drawing. All the flues are of cold drawn, seamless steel, of which there are a total of 219, all 3½ in. in diameter. The pipes from the feedwater heater are placed inside the smokebox which secures a better exterior appearance without greatly lessening the accessibility via the smokebox door.

The cylinders are of cast steel, the use of which material reduces the weight by 2,500 lb. The diameter is 27 in. and the stroke is 30 in. The design of these cylinders follows the usual conventional style of cast iron construction. The valves are of the piston type, size 14. in. and have a maximum travel of 9 in. They are actuated by a Baker valve gear, arranged to give a maximum cutoff of from 82 per cent to 84 per cent. This cutoff has been found to give the most satisfactory results at the relatively high speeds at which this locomotive is operated. The locomotive is equipped with a single exhaust pipe having a 7½-in. nozzle.

The main driving boxes are equipped with supplemental bearings designed for use on high powered locomotives. An idea of the construction of the boxes can be obtained by referring to the view shown in one of the illustrations. This type of main driving box was originally developed to withstand the severe service encountered in locomotives of three-cylinder design. It will be noted that additional bearing surface is provided below the center line of the journal which tends to eliminate excessive wear at the bottom edges of bearings of the ordinary type.

This engine is equipped with the standard New York Central 12-wheel tender. It has a Commonwealth cast steel frame and six-wheel trucks, equipped with clasp brakes. The tender is also provided with a water scoop in accordance with New York Central practice. The tank is of the water leg type having a capacity of 15,000 gal. of water and 18 tons of coal.

PRINCIPAL DIMENSIONS, WEIGHTS AND PROPORTIONS OF THE NEW YORK CENTRAL 4-8-2 LOCOMOTIVE

Railroad	New York Central
Builder	American Locomotive Company
Type of locomotive	4-8-2
Service	Fast freight
Cylinders, diameter and stroke	27 in. by 30 in.
Valve gear, type	Baker
Valves, piston type, size	14 in.
Maximum travel	9 in.
Outside lap	1 ½ in.
Exhaust clearance	0 in.
Lead in full gear, constant	¾ in.
Weights in working order:	
On Drivers	240,500 lb.
On front truck	60,500 lb.
On trailing truck	58,000 lb.
Total engine	359,000 lb.
Tender	275,000 lb.
Wheel bases:	
Driving	18 ft. 0 in.
Total engine	42 ft. 0 in.
Total engine and tender	84 ft. 7 in.
Wheels, diameter outside tires:	
Driving	69 in.
On front truck	33 in.
Trailing truck	44 in.
Boiler:	
Type	Circular
Steam pressure	225 lb.
Fuel, kind	Bituminous
Diameter, first ring, inside	82 7/8 in.
Firebox, length and width	120 1/8 in. by 90 1/4 in.
Combustion chamber, length	51 in.
Tubes, number and diameter	39-3 1/2 in.
Flues, number and diameter	180-3 1/2 in.
Length over tube sheets	20 ft. 6 in.
Grate area	75.3 sq. ft.
Heating surfaces:	
Firebox and comb. chamber	320 sq. ft.
Arch tubes	36 sq. ft.
Tubes and flues	4,095 sq. ft.
Total evaporative	4,451 sq. ft.
Superheating	1,985 sq. ft.
Comb. evaporative and superheating	6,436 sq. ft.
Special equipment:	
Superheater	Type E
Feedwater heater	Elesco
Stoker	Elvin

Engine truck	Commonwealth
Trailing truck	Delta B.
Tender:	
Water capacity	15,000 gals.
Fuel capacity	18 tons
General data estimated:	
Rated tractive force, 85 per cent	60,000 lb.
Rated tractive force, with booster	72,700 lb.
Cylinder horsepower (Cole)	3,640 hp.
Weight proportions:	
Weight on drivers ÷ total weight engine, per cent	67
Weight on drivers ÷ tractive force, 4.02	
Total weight engine ÷ comb. heat surface	55.8
Boiler proportions:	
Tractive force × dia. drivers ÷ comb. heat. surface	645
Firebox heat. surface + grate area	4.25
Firebox heat. surface, per cent of evap. heating surface	7.18
Superheat. surface, per cent of evap. heating surface	4.45

Commissioner Woodlock Before Senate Committee

WASHINGTON, D. C.

QUESTIONING of Commissioner Woodlock of the Interstate Commerce Commission by the Senate committee on interstate commerce was concluded on January 23, after he had been called before the committee for the third time. As before, most of the questions were asked by Senator Wheeler, who has been leading the opposition to confirmation of his appointment, on the ground that he "has been a propagandist for the big interests in New York City, and is opposed to our views on farm problems and others." Mr. Woodlock said he had not been a propagandist except in the sense that "propaganda is what the other fellow says."

Senator Wheeler continued reading extracts from newspaper and other articles written by Mr. Woodlock, in which he had discussed railroad valuation, the Adamson law, the Howell-Barkley bill, farm relief and other subjects, and questioned him or argued with him about the views expressed. He said that if Mr. Woodlock thinks the farmers need no help "he is not the man to go on the Interstate Commerce Commission, which was created for the protection of the public and the farmers." Mr. Woodlock said he knew of nothing in the law creating the commission that directed it to relieve the farmer except by lawful rates and that he understood it was to decide cases in favor of the farmer only when the farmer is right.

Mr. Woodlock said he thought President Wilson had been deceived as to the purpose of the Adamson law and that he found it hard to believe that all the supporters of the Howell-Barkley bill knew what they were doing. When Senator Wheeler insisted that the railways have now joined labor in asking Congress to pass "practically the same bill" Mr. Woodlock said there is "all the difference in the world" between the two bills; that there is a very valuable principle in the new bill that was not in the other. Senator Gooding remarked that so far as the public is concerned he thought the Howell-Barkley bill the better of the two and Senator Wheeler said he agreed with him.

Senator Wheeler read an editorial published in "Labor" in which "net revenue" figures were used to show an increase in railway "profits per employee" but when Senator Couzens remarked that the "net revenue" figures seemed higher than those which Senator Cummins had quoted at a hearing before the committee earlier in the day Senator Cummins said that he doubted their accuracy as the term "net revenue" is not used in the accounting terminology of the Interstate Commerce Commission and that the "net railway operating income" is the important figure.

When Mr. Woodlock was before the committee on

January 13 Senator Wheeler had taken up most of the time in reading from a speech made by Senator Cummins in 1917 when he was opposing confirmation of Winthrop M. Daniels as a member of the commission. Senator Cummins had particularly objected to a decision of the New Jersey public utilities commission on "going value."

Mr. Woodlock had written something which Senator Wheeler had taken as approving the New Jersey decision but he said he had read over Cummins' speech and found that he agreed with him exactly that going value should be added only when it represented an outlay of capital.

In another discussion of valuation he said that he had often suggested that what is needed is some way of bringing about an agreement between the railroads and the government on some valuation for rate-making purposes which would insure that the money reasonably and prudently invested in the railroads should have a fair return. He admitted that such a thing is improbable, but said that some stipulation of the amount the railways should be allowed to earn a fair return on for a period of years is the only way out of the dilemma. He said he thought the public ought not to be saddled with imprudent investment through a rate base but that the courts have held that the roads are entitled to a return on present value, not cost. Senator Cummins said he had suggested to the railways an agreement on the basis of their prudent investment and that he was still for it.

At the conclusion of the questioning Mr. Woodlock asked permission to say that he had never been a Republican, except in opposing the Democratic mayor of Mt. Vernon, N. Y., because of a local situation, and that he had not voted for John W. Davis because he was not for the League of Nations, but that he believed in party government and in a tariff for revenue, and that most of his votes had been Democratic. Senator Wheeler said that he would not disagree with an appointment of Mr. Woodlock as a member of the Tariff Commission and that he could not criticize him for not having voted for Davis for President.

Mr. Woodlock added that on the day he took office with the commission he had informed his colleagues that he would take no part in the Nickel Plate case, because as a director of the Pere Marquette he had taken part in the negotiations concerning it, and that he had never discussed the case with his colleagues. He said the President had offered him the appointment on January 2 and that at that time his only employment was writing articles for the New York Sun. In reply to questions he said he did not think that Matthew C. Brush had originally recommended his appointment, but that he thought it very probable that Mark W. Potter had made the original recommendation, but he did not know.

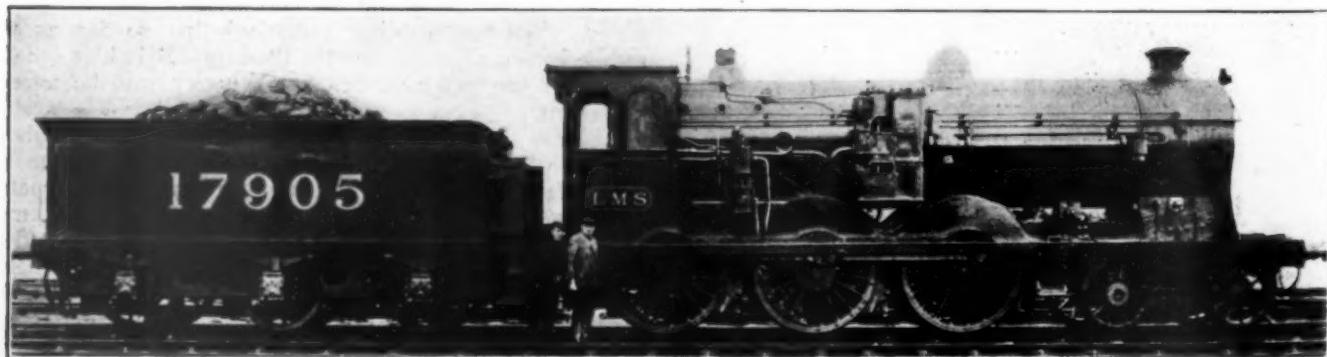
Mr. Woodlock also asked the committee's permission "to lay before it some considerations of a general character with respect to the commission, its work and the tremendous importance attaching to any appointments that may be made to its membership. In doing this, I wish to be utterly impersonal and to exclude all thought of my own case," he said.

"After nearly a year's experience in the work I say without qualification that there is no appointment in the power of the President with the advice and consent of the Senate, which is of more importance to the public interest than an appointment to the Interstate Commerce Commission—not even that of a justice of the Supreme Court.

The power that rests in the commission far transcends the power entrusted to any other commission in the world. The commission, in the course of its work, exercises all three functions of government, legislative, executive and judicial. The power to make rates is legislative, the power to determine value—even if such determination be only of *prima facie* force—is judicial. The administrative powers of the commission touch virtually all the relations of shipper and traveler with carrier. The magnitude of the economic interests committed to the control of the commission equipped with these powers far surpasses that of any other single group of economic interests on this earth. We have to deal with half the railroad mileage of the world, which in the words of Chief Justice Taft, is committed 'to the fostering guardianship and control of the commission.'

"Furthermore, in exercising these functions of 'guardianship and control' the commission has to deal with a mass of facts which for multitude and complexity are without parallel in administrative work. No one can come to the commission fully equipped by experience for this work, for in no single avocation known to man can one obtain experience in more than a part of those matters with which the commission has to deal. What standard of moral integrity and mental intelligence can be too high to require of an appointee to such a body?

"The responsibility attaching to the Senate in approving an appointment to the commission is very great, and too much care can not be exercised in scrutinizing the qualifications of an appointee. For this reason, I heartily commend the action of this committee in summoning before it candidates for examination as to their capacity and integrity. Such a proceeding, moreover, should be a welcome opportunity for an appointee—I digress momentarily to say that it was especially welcome to me—to subject himself to a fair, honest, impartial and searching inquiry at the hands of this committee, and he should be well satisfied to abide by its results."



London Midland & Scottish Locomotive Equipped with Worthington Feed Water Heater

Hearing on Consolidation Bills

I. C. C. advises conservative policy—Cummins wants to equalize earnings

AFTER listening patiently for six years to the opinions of others as to how, when, why and whether the railways should be consolidated into a limited number of systems, and after devoting some effort to the making of a consolidation plan, the Interstate Commerce Commission has finally revealed its own views on the subject.

In the judgment of a majority of the commission, "the country ought not to be rushed headlong into any gigantic plan of consolidation which may later prove to be ill-conceived and based upon mistaken premises," but it ought instead to "proceed cautiously without any undue anticipation of possible beneficial results, feeling its way along step by step, watching and analyzing results, and allowing experience to guide." While the commissioners believe that consolidations or unifications may often be most desirable, they also believe that the desirability of consolidation in a short time into a few great systems cannot be demonstrated except by actual experience.

This position of the commission, which has never before given public expression of its views as to a policy of consolidation since the passage of the Transportation Act, was explained in a carefully prepared statement by Chairman Joseph B. Eastman as representing the views of all its members except Commissioners Hall, Esch, Lewis and Cox, at a hearing before the Senate committee on interstate commerce on January 22 on proposals to amend the consolidation provisions of the law. The hearing had been opened on January 21 by Senator Cummins, who, in explaining the purpose of his bill, S. 1870, had declared that consolidation into a limited number of systems of approximately equal strength is the only alternative to government ownership. While he was not particularly insistent upon limiting the period for voluntary consolidations as proposed in his bill to three years, he wanted to hasten progress by requiring the commission at the end of some such period to promulgate a plan for the completion of the process, and by applying pressure in the form of a recapture of earnings above 6 per cent of roads not yet consolidated for the benefit of the weaker roads.

The commission does not approve "any plan, direct or indirect, which has as its object the forcing or compelling of consolidations," but proposes a bill to permit the process of consolidation to develop under the guidance of the commission "in a more normal way." A draft of such a bill had been submitted to the committee during the last session of Congress and was outlined by the commission in its annual report. A majority of the commission as then constituted approved the bill, Mr. Eastman said, and a majority now approves it as preferable to the Cummins bill.

Senator Cummins based his argument largely on the need for equalizing earnings for the purpose of taking care of the weaker lines without an "intolerable" increase in rates. If the net railway operating income of the roads for 1924 could have been distributed over all the lines, he said, it would have paid all bond interest and similar obligations and a very satisfactory dividend on all the stock and all the roads would be in good credit without any need for a 5 per cent increase in rates such as is being asked by the western roads. Commissioner Eastman, on the other hand, suggested that while there are many lines

WASHINGTON, D. C.

that cannot be kept going without an increase in earnings, there are several ways in which their situation might be improved, such as by an increase in traffic, a reorganization, increased divisions, or by being taken over by stronger lines, and he thought there are few of them that would not be taken over on some terms if they could not get along otherwise. The difficulty, he said, is that the weak lines will not accept the price the stronger line is willing to pay.

A separate statement was made by Commissioner Hall, who has been in charge of consolidation work for the commission and who did not agree in all respects with the position taken in Chairman Eastman's statement but who is in favor of "opening the door" and giving an opportunity to see how far the impulse of American genius would go in the direction of effecting voluntary and natural consolidations, subject to proper safeguards, before the commission is required to prepare a plan.

R. C. Fulbright, chairman of the legislative committee of the National Industrial Traffic League, also told the committee that the league favors voluntary consolidations without any legislative pressure and that the problem of the weak lines is "not so serious as to warrant giving physic to the entire railroad system."

An abstract of Mr. Eastman's statement follows:

Views of a Majority of the I. C. C.

Not so very long ago, the dominating opinion in this country was that mergers, consolidations or unifications of railroad properties were hostile to the public interest and ought to be restrained by law in order that competition might reign supreme. The pendulum has now swung to the other extreme and it seems to be the dominant opinion of the country, at least in many important and influential quarters, that our transportation salvation lies in the way of widespread, radical and almost revolutionary consolidations. In 1920 the commission was of the view that the former opinion was unfounded in many respects and that the door should be opened to many consolidations or unifications which were then made impossible by restraining state or federal laws. We so recommended to Congress and submitted a draft of legislation which would accomplish this purpose and which was similar in many respects to the bill which we now submit. We went no further then, however, than to express the opinion that the door should be opened, and we did not undertake to stand sponsor for the thought that the consolidation of the railway properties, within a relatively short period of time, into a comparatively small number of great systems would produce results that are clearly desirable in the public interest. In our opinion this fact has yet to be demonstrated. Nor do we believe that it can be demonstrated except as the result of actual experience.

A Tendency to Exaggerate Advantages

We have an impression that there has been a tendency to exaggerate the possible economies and other advantages of great consolidations, and we have been strengthened in this impression by the evidence which has been brought to our attention in connection with the unifications which we have been asked since 1920 to approve. We think that the country ought not to be led into the belief that great consolidations of railroad properties involve any probability that the general level of freight rates may thereby be substantially reduced. Economy and efficiency of operation are much more than a matter of size. There are small railroad companies which are as economically and efficiently operated as any of the great railroad systems. It still remains a question how far a single management can with advantage be extended over railway lines.

It is quite possible, also, that the idea of co-operation deserves as much emphasis as, and perhaps more emphasis than, the idea of widespread consolidations. The past two or three years have seen an improvement of railroad service and an absence of conges-

tion at a time of heavy traffic which have never been enjoyed in the past. This has meant economy both to the railroads and to the shippers. The most important factors in this service improvement, we are inclined to believe, have been the co-operation of the railroads with each other through the medium of the Car Service Division of the American Railway Association, with the aid of our own Bureau of Service, and the co-operation with shippers through the advisory committees which have been organized in various parts of the country. Notable and very important experiments in co-operation with their employees have been made by certain railroad companies, and it seems probable that this idea is now in process of further extension and development. A further most promising field of co-operation of carriers with each other, with an eye to economy and efficiency, lies in the terminal operations at and about the great metropolitan centers. In this connection it should not be forgotten that railroad competition often involves a waste for which someone must pay. To what extent this waste is compensated by advantages in other directions is a question still open to debate.

We do not wish it to be understood that we see no probable advantages or benefits in the further consolidation or unification of railroad properties. On the contrary, we are firmly persuaded that such consolidations or unifications may often be most desirable. We do not believe, however, that anyone now knows how far the process may be carried with advantage or, indeed, without positive disadvantage. A very important matter which ought not to be lost sight of is that it is not at all impossible to effect consolidations with a prodigality of expenditure or incurred liabilities that will nullify all good results. There have been many instances of this kind in the past. If this is to be avoided constant vigilance and close supervision are necessary.

Speaking for the moment in behalf of myself only, I am inclined to believe that it will prove both desirable and necessary, if great consolidations of railroad properties are to be permitted, to give some thought to their social and political effects. There seems good ground for a fear that the greater the corporation the more likely is control over its management to be divorced from real ownership. There is danger that such control may be associated with a mere shoestring financial interest. The thought is at least worthy of consideration that these huge railroad systems which are proposed ought not to be tolerated unless accompanied by provisions for representation on their directorates of both employees and the public at large.

Purposes of Bill Proposed by I. C. C.

The defects in existing statutory provisions which the commission believes will be corrected by the legislation which it proposes were discussed by Mr. Eastman in part as follows:

First: Difference of opinion exists as to whether consolidations or unifications of railway properties can lawfully be accomplished without our approval, if those consolidations or unifications do not run counter to federal anti-trust or other statutes and are permitted by the laws of the states in which the railway companies in question are incorporated and in which they operate. A majority of the commission answered that question in the affirmative in *Acquisition and Stock Issue by N. Y. C. & St. L. R. R.*, 79 I. C. C. 581. The difference of opinion is not confined to the commission, but exists also among the legal advisers of the railroads. In our judgment it ought to be set at rest by a change in the law which will remove all doubt as to its meaning.

The language of Senate Bill No. 1870 upon this point is such that the difference of opinion will continue to exist. In the bill which we submitted to Senator Smith last February, however, doubt is removed by a provision definitely making it unlawful to consolidate or unify railroad properties in any way, direct or indirect, "except upon specific approval and authorization by order of the commission."

As we see it, the consolidation or unification of railway properties is a matter which vitally concerns interstate commerce. While we do not favor, for reasons which I shall later state, the adoption in advance of a complete plan of consolidation, we do believe that the process of consolidation should be subject in all respects to the control and guidance of federal authority. We fear that any division of authority and responsibility as between the state and the federal governments may interfere with a well-ordered and consistent control in the public interest.

Under the law as it now exists such power as the states may have over consolidations or unifications is at best only a power to agree with the carriers. Moreover, such consolidations or unifications as the states may have power to authorize without our consent cannot actually be consummated without our approval if they involve the issue of new securities. Under such circumstances retention of state authority, so far as it may now exist, means only that the carriers will in certain instances be given

a double-barreled opportunity to effect consolidations or unifications. Such a division of responsibility can operate only to the disadvantage of the public.

Second: Under the present law a distinction is made between acquisitions of control which involve and those which do not involve the consolidation of the carriers in question into a single system for ownership and operation. Where such consolidation is not involved, the acquisition may be approved by the commission at any time. Where it is involved, the transaction cannot be approved until after we have adopted a complete plan and then only under certain conditions which do not apply to mere acquisitions of control as distinguished from consolidations. Difference of opinion exists in and outside the commission as to when acquisitions of control involve the consolidation of carriers into a single system for ownership and operation. This distinction, combined with the fact that consolidations cannot be approved until after the complete plan has been adopted, has resulted in a continually increasing resort to forms of unification which are conceded to be virtual consolidations, but which attempt to avoid consolidation in a technical, legal sense by the preservation of the corporate identities of the carriers that are being unified. In this way the distinction which the law now attempts to make is deprived of any real virtue or effect. That is to say, the result of the distinction is only to encourage and promote forms of unification which are less simple and less desirable in many respects than technical consolidations, but accomplish the same practical purpose. The preservation of corporate identities in itself means added expense as well as complexity of legal relations and interrelations. Where resort is had to leases, they often convert dividends upon stock into fixed charges which might be avoided if technical consolidations were practicable. Other objections might be mentioned.

In our opinion no useful purpose is served by this distinction between forms of unification. If the complete plan of consolidation is to be retained as a feature of the law, then the distinction between kinds of unification should be changed so that it will be one of substance rather than form, or the distinction should be eliminated and all kinds of unification, including technical consolidations, should be permitted with our approval both before and after the adoption of the complete plan. Our own opinion is that the complete plan of consolidation should not be retained as a feature of the law. That being the case, from our point of view all reason for a distinction between kinds of unification ceases to exist and no provision is made for such a distinction in the bill which we have submitted. Such a distinction is retained in Senate Bill No. 1870, but what the reason or purpose may be we do not know.

I may say, also, that our bill is drawn with the intent of covering all possible forms of unification, whether direct or indirect. For example, it specifically covers unifications which are brought about through the medium of a separate stockholding company. At the present time there is doubt whether unifications accomplished in this indirect way are within the purview of section 5.

Arguments Against a Complete Plan

Third: The law now requires the adoption by the commission of a complete plan. Considered theoretically, such a complete plan has a great deal of merit. The practical experience which we have gained in attempting to formulate the plan, however, leads us to doubt the utility and, indeed, the wisdom of this provision of the law. The work which we have done in this direction has by no means been wasted effort, for an immense amount of information has been gathered and analyzed which was not theretofore available and which will be most useful and valuable whether or not the consolidation plan is retained, provided we are given the necessary authority to draw upon this store of information as occasion may require.

At these hearings numerous and wide differences of opinion developed as to the form which the final plan should take. The opportunities for differences of opinion are, of course, almost infinite. To mention only a few of these opportunities, the law speaks of a "limited number of systems." This may mean 10, 15, 20, 40 or any number materially lower than the number of systems that now exist. The number finally selected has an important bearing upon the preservation of competition and the maintenance of existing routes and channels of trade and commerce. The railroads are now divided for rate-making purposes, and to a certain extent physically, into four large groups—the eastern, southern, western, and Mountain-Pacific groups. These large groups are in turn subdivided into certain districts which in one way or another have a recognized status. Shall the new systems be devised with regard or without regard to these existing groupings? There are advocates of both plans, and upon the answer to this question many large cities feel strongly that their future prosperity depends. The future simplification

of the rate structure also has an important bearing upon this question. To what extent should the new systems be designed for an east-and-west trend of traffic and to what extent for a north-and-south trend? In certain sections of the country, will competition and existing routes and channels of trade be better preserved if the railroads are united into a regional system or if they are allotted to separate systems extending into other parts of the country? In New England, for example, there is wide difference of opinion upon this question. To what extent should railroads which occupy positions of strategic importance because of geography or the location of important raw materials be assigned to other systems and to what extent should they be retained as independent bridge or terminal systems with which other systems may freely make traffic connections? To what extent, also, should separate terminal systems be retained or provided for in the great metropolitan traffic centers?

These are only a few of the many questions which arise in the consideration of this stupendous problem. The various so-called acquisitions of control or unifications which we have been and are being asked to approve under paragraph (2) of section 5 frequently have little relation to our tentative plan of consolidation and sometimes little or no relation to any plan that was suggested at the hearings. We shall, of course, proceed with the adoption of a complete plan of consolidation if that be the will of Congress; but we are impressed by the magnitude and complexity of the problem and by the extraordinary insight, not only into the present but into the future of this country and its means of transportation, which is necessary to its wise solution. Moreover, no plan that we may adopt will be final, for under the law it may be changed from time to time at will, if we find that the public interest so requires. We are confident that, whatever plan be adopted, we shall continually be asked to change it in order that hitherto unforeseen projects may be carried into effect.

A majority of the commission has, therefore, been impelled to the belief, that results as good and perhaps better are likely to be accomplished with less loss of time if the process of consolidation is permitted to develop under the guidance of the commission in a more normal way. Stating the same thing in other language, we are strongly inclined to believe that it is wise to place greater reliance upon the processes of gradual evolution, learning from experience as we go along and making practical use of the results of this education.

Power to Attach Terms and Conditions

Fourth: The present law apparently gives the commission very broad power to attach terms and conditions to its approval of any unification or consolidation. Nevertheless the extent of our power to modify or change the essential nature of the transaction which we are asked to approve or to attach terms and conditions which are not strictly germane to the transaction has frequently been questioned. It has also been questioned how far we have power to make it a condition of any consolidation or unification that existing routes and channels of trade and commerce shall be maintained, in view of the limitation in paragraph (4) of section 15 on our power to prescribe through routes. I refer to the prohibition against what is known as short-hauling a carrier. We believe that we should be given very broad and clear power to require modifications of any consolidation or unification that is proposed and to attach terms and conditions to our approval. It may seem unduly drastic to require a finding that the consolidation or acquisition will not be inconsistent with the public interest in any material respect, but it will be noted that we are not restricted to the approval or disapproval of the consolidation or unification as proposed, but are authorized to approve "with such modifications and upon such terms and conditions" as we may find just and reasonable. If what is proposed will promote the public interest in certain respects but not in others, it need not be wholly rejected but may be approved in a modified form that will eliminate the objectionable features.

I call particular attention, however, to the fact that the commission is specifically authorized by our bill to disapprove a consolidation or unification upon the ground that it does not include a carrier, or all or any part of its property, which ought to be included in the public interest and which it is possible to include upon reasonable terms. We believe this to be a most important provision.

Fifth: Subparagraph (b) of paragraph (6) of section 5 has been retained in the bill which we now submit in somewhat modified form. The modification consists in providing that the value of the consolidated properties for the purpose of this provision shall be determined "by the commission in such manner as it may deem appropriate, either by utilizing the results of the valuation of the properties under section 19a of this act or otherwise." The thought underlying this modification is that it may be possible to determine value for the purposes of this provision more expeditiously than is possible under the valuation procedure

prescribed in section 19a. The safeguard provided by this provision is, of course, a desirable one, for certainly the capitalization of the consolidated corporation ought not to exceed the amount upon which its right to a fair return must be predicated. The capitalization may be less than this amount without danger either to the security-holders or to the public, and perhaps with advantage to both. But it ought not to exceed that amount. However, it should be understood that even with this modification this provision is likely to cause material delay in the process of consolidation. It has been suggested as a temporary alternative, pending further progress in our valuation work, that it should be provided that the capitalization of the consolidated corporation should not exceed the aggregate capitalizations of the carriers which are consolidated.

Sixth: As our bill is drawn, the commission is required to preserve "all records and other evidence heretofore taken and now in the files of the commission, under the terms of this section as heretofore enacted" and is authorized to utilize such records and evidence in reaching its conclusion with respect to any consolidation or unification proposed.

Provisions of the Commission's Bill

Summing up our recommendations, the bill which we now propose is merely an amplified form of the statutory provisions which we proposed in 1920. It is short and, we think, simple in its terms. Doubtless the phraseology can be improved, and we have no pride of paternity as to that. Briefly the bill

1. Relieves the commission from its present duty of adopting a complete plan of consolidation.
2. Makes unlawful any consolidation or unification in any form, direct or indirect, except with the specific approval and authorization of the commission.

3. Gives the commission broad power to approve or disapprove such consolidations or unifications as may be proposed, and to make such modifications and attach such terms and conditions prior to approval as it may find just and reasonable.

4. Specifically authorizes the commission to disapprove a consolidation or unification upon the ground that it does not include a carrier that ought to be included and can be included upon reasonable terms.

5. Specifically authorizes the commission to make it a condition of any consolidation or unification that existing routes and channels of trade and commerce shall be maintained.

6. Authorizes the commission to utilize, in reaching its conclusions with respect to any consolidation or unification proposed, all records and other evidence heretofore taken and now in its files, under the terms of the section as heretofore enacted.

7. Modifies the provision which limits the capitalization of the consolidated corporation to the value of the combined properties, by enabling the commission to arrive at a value for this purpose either by utilizing the results of the valuation under section 19a or otherwise.

The bill opens the door to all consolidations or unifications of railroad properties that may be shown to be in the public interest. It does not attempt to force the process in any way, but permits it to develop naturally in the increasing light of experience, subject to the guidance of the commission.

Commissioner Eastman also said that publication of a plan of consolidation promotes speculation in the securities of the roads proposed to be grouped and may make it more difficult for the parties to get together. When Senator Wheeler asked if it is not possible for control of a system to be held by a comparatively trifling financial interest by issuing a large amount of stock without voting power, as is proposed in the case of the new Nickel Plate company, Mr. Eastman said he thought the commission could control that when it passes upon applications for authority to issue securities. When he said that consolidations would not reduce rates unless they effected sufficient economies, Senator Wheeler asked if economies could not be effected by giving the commission supervision of railway expenditures for materials and supplies. "If you mean by giving us control over such expenditures so that we might increase or diminish them then you would have government management," replied Mr. Eastman. He said that he did not know in just what way Commissioners Esch and Cox differ from the opinion of the majority but that Commissioner Lewis is in doubt as to whether a general plan ought to be required and that Commissioner Hall would speak for himself.

Senator Cummins said the public misapprehends the

purpose of his bill. While he believes that very substantial economies, estimated at from \$100,000,000 to \$300,000 a year, could be effected through proposed consolidations, yet they do not furnish the impelling reasons. In his opinion the railways cannot be operated under private ownership on rates as low as ought to prevail without consolidation. Taking the average of the past three years, Senator Cummins said, over 60,000 miles of railroad have earned from less than nothing to less than 3 per cent on the lowest estimate of their value that could be used. A railroad that cannot earn 4 per cent on a proper value cannot permanently survive, and yet it is unthinkable that any large proportion of the 60,000 miles should be abandoned because the people must continue to be served or the country will be met with an overwhelming calamity. If competitive rates were to be raised to take care of these roads the cost of transportation would be intolerably advanced, he said, and the only alternative to consolidation would be government ownership, to which he is unalterably opposed.

When the transportation act was passed, he said, there was a good deal of scepticism, but no student of the subject now doubts that the roads can be grouped into a few systems of approximately equal strength so that they can all earn approximately the same rate of return.

In December, 1924, Commissioner Hall had told him that he hoped the commission would be able to promulgate its plan in 1925, but it has not found it possible to agree upon a plan or even to devote any considerable time to the subject. Meanwhile there has been a marked movement on the part of the railways toward consolidation, and, believing that it would facilitate voluntary action and bring about earlier results than could be had under the present law, he had introduced his bill. This differs from the bill he introduced at the last session, Senator Cummins said, in two important particulars. It postpones for three years the time before the commission is required to promulgate a plan and it omits the provisions for federal incorporation, to which there is much opposition. After the period of voluntary initiation on the part of the railways expires, the commission is directed to take up the task of completing the process and it is hoped the task would then be easier than now. As an incentive to the railways to co-operate, and as a spur to them to proceed with consolidations, the bill provides that if any road in a system proposed by the commission earns over 6 per cent the excess is to be distributed among the roads allocated to that system earning less than 5 per cent, and the bill also seeks to remove one of the great obstacles to consolidation by giving power of condemnation to acquire securities or property.

When Senator Watson remarked that if it takes as long for other systems as the commission has spent in wrestling with the Nickel Plate proposal "they will never get it done," Senator Cummins said that he knew three years may be thought too brief a period and he would have no objection to leaving some discretion to the Interstate Commerce Commission at the end of that time. "Unless we are greatly misinformed," he said, "there will be either initiated or completed by that time some very important consolidations and it will then be easier for the commission to take up the rest of the roads and allocate them to systems. There is no way of enforcing consolidations unless the government were to acquire the roads first and then organize companies to return them to and I do not regard that as practicable."

Commissioner Hall's Views

Commissioner Henry C. Hall testified on January 23, saying he had not joined in recommending the bill drafted by the commission because it contained some things which

did not seem to him altogether desirable. He said he differed from Mr. Eastman in that he would set up a system that would not have the right to its long haul and expect it to compete with an existing system that would not be so restricted.

He said the Cummins bill in some of its features seems to improve on the existing law but that he desired to suggest some constructive criticisms of it. The present law, he said, proposes only one form of aggregation, that in which one corporation owns as well as operates, but does not contemplate an aggregation through the more usual forms such as by lease or stock ownership which have been used in bringing together the great systems that now exist. The bill removes that restriction and contemplates consolidations in the various forms that heretofore have been found serviceable and probably will be again, many of which seem better adapted to getting together than the plan of transferring properties by deed into a new ownership. Also the present law provides that consolidations cannot take place until the adoption of a "complete plan," including all railway properties in the United States, a very comprehensive term. It seemed to the commission desirable that the requirement that all carriers be included might be removed; also that it might be desirable if the plan could be put out in chapters, each dealing with one section of the country at a time, and that it would facilitate dealing with terminal companies if the systems could be taken up first. The requirement of a complete plan has operated to restrain efforts toward consolidation because the "main gate" has been closed and only a "postern gate" left open. By this he meant paragraph 2 of section 5, which specifically excludes consolidations in the technical sense while the objective of the rest of section 5 is consolidation. No application for authority to consolidate has been received by the commission since 1920, when three were filed, and, because it was not prepared with a plan, there have been many applications for authority to acquire control.

The provisions in the Cummins bill which allow consolidations to proceed and defer a plan until the carriers have had a chance to propose voluntary consolidations are very great virtues, Mr. Hall said. To encourage the investment of fresh capital, necessary to enable the railways to keep pace with the growth of a live country, it is desirable that the credit of the railways shall be good and there must be some limit to the debt they incur so that their financial structure may be more flexible and so that they may be able to meet lean years.

Senator Couzens asked how the capital structure can be kept from becoming top-heavy with debt unless there is to be a greater spread between the return which the shareholder gets and that of the creditor. Mr. Hall replied that if the carriers are so grouped as to have a good variety of traffic less subject to fluctuations their stock would be more attractive to investors. Senator Cummins interrupted to say that in 1920 the average rate of interest on bonds was 4½ per cent whereas the rate of fair return is 5¾ per cent and that if the condition could be made stable that would afford sufficient spread. When Senator Couzens said "that is largely theoretical" Senator Cummins said that a return of 5¾ per cent would afford an abundant fund for dividends and that while he realized that return had not been realized he was sure it would be. Mr. Hall remarked that the financial structure of the company largely determines how much of a return of 5¾ or 6 per cent would be available for dividends.

Continuing, he said that all impulses that tend toward aggregation of railways have been restrained by law since 1920. For 100 years the railways had been getting together into systems and they probably would have continued to do so, in one way or another, to the extent per-

mitted by state laws and the anti-trust laws. However, the law has served a very valuable purpose in promoting widespread discussion of consolidation and informing the public mind on the subject, and "all that is needed now is to open that large door and let them go ahead under such proper safeguards as Congress may authorize the commission to apply." In view of the genius of the American people for building up big things out of little things I believe the impulse from within will be stronger than compulsion from without and that until that impulse has exhausted itself it would seem to me wiser to let it have a fair chance to work without the new systems being subjected to any restrictions which do not apply to their competitors. In our annual reports we have asked Congress to let us allow such consolidations as we would allow if we had a plan. If the period were made five years instead of three years it would give a further opportunity for that impulse of American genius to work and I would like to see, before the commission is required to put out a plan, how far that impulse would go, subject of course to proper checks.

When Senator Couzens asked whether there is any impulse for the stronger roads to take over the weaker Mr. Hall replied that he thought they recognize that it is necessary and that there is a disposition to do so if it can be done on reasonable terms. Senator Couzens also asked whether the commission believes that transcontinental systems from the Atlantic to the Pacific such as the Canadian Pacific would not be better than systems confined to smaller regions. Mr. Hall replied that the process has not reached a stage where it can be said what the view of the commission is; that one or two commissioners may believe that transcontinental systems would be a good thing, but he pointed out that there are more roads in the East than in the West and that it is not only a question of reaching the coasts because the intermediate territory must be considered. Senator Couzens said that all parts of the country are not in the same condition of prosperity at the same time and that it seemed as if with great systems reaching different parts conditions could be more equalized. Commissioner Hall said that the question is an interesting one but that it involves more study than has been given it by the commission and that we not only have east and west coasts but also a southern coast and to some extent a northern coast on the lakes.

N. I. T. L. Opposed to Compulsion

The position of the National Industrial Traffic League, Mr. Fulbright said, is, generally speaking, the same as that of the commission, but it has not thought that any law should be enacted that would deny to a railroad its right to its long haul. It believes that if voluntary consolidations are allowed, at least for a period of years, there will be a considerable development of consolidation but it does not believe that consolidations will bring about all the advantages claimed for them. Neither does it believe that any future time for the making of a plan should now be set.

"Sometimes I think we exaggerate the importance of the weak line problem," said Mr. Fulbright. "Some of them are already controlled by the stronger lines and in the Southwest we have only a few weak lines left that are not under control by stronger lines." He pointed out that the Gulf Coast Lines were formerly very weak but that later the situation was reversed and the Missouri Pacific was glad to take them over to help itself. He thought that the problem of the Kansas City, Mexico & Orient might be solved by careful management and local rates slightly higher than they would be in a more developed territory, until it can get on its feet.

"We believe that no body of men to-day is wise enough

to say how the railroads should be grouped," he continued. "There is no reason why a policy or law should be adopted to enable the owners of tap-lines whose traffic has been exhausted to unload them on others. We are opposed to Congress adopting a policy that the railroads should be consolidated into a limited number of systems and we do not believe in indirect compulsion to require that certain lines be included in a certain group or in taking earnings from one road if it will not buy another. The principle is abhorrent. It may become necessary some day but we don't believe it is now."

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended January 16 amounted to 936,655 cars, an increase of 2,633 cars as compared with the corresponding week of last year and of 41,804 cars as compared with 1924. In the Eastern, Northwestern and Central Western districts the loading was less than that for the corresponding week of last year and all classes of commodities showed decreases except coke, merchandise and miscellaneous, but the latter classification showed an increase of 20,914 cars. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING, WEEK ENDED JANUARY 16, 1926				
Districts	1926	1925	1924	
Eastern	211,300	214,448	219,221	
Allegheny	186,347	185,916	181,806	
Pocahontas	56,740	49,020	40,902	
Southern	147,416	144,563	138,777	
Northwestern	114,006	120,969	111,305	
Central Western	150,055	150,950	143,397	
Southwestern	70,791	68,156	59,443	
Total Western	334,852	340,075	314,145	
Commodities				
Grain and grain products	49,510	51,678	47,426	
Live stock	34,542	38,517	37,749	
Coal	192,820	209,231	204,665	
Coke	17,804	13,749	12,190	
Forest products	66,729	73,449	71,749	
Ore	10,211	10,515	8,722	
Mdse., l. c. l.	242,898	235,656	224,267	
Miscellaneous	322,141	301,227	288,083	
Total	936,655	934,022	894,851	
January 9	907,119	934,170	872,023	
January 2	741,239	767,098	706,292	
December 26 .....	.....	701,079	647,324	
December 19 .....	.....	967,886	900,654	
Cumulative total, three weeks	2,585,013	2,635,290	2,473,166	

The freight car surplus for the week January 8-14 averaged 309,956 cars, including 130,418 box cars and 117,032 coal cars. The Canadian roads for the same week had a surplus of 24,100 cars, including 19,000 box cars and 400 coal cars.

Car Loading in Canada

Revenue car loadings at stations in Canada during the week ended January 16 showed an increase over the previous week of 2,234 cars. Grain loading fell off by 1,586 cars and coal was lighter, but lumber, pulpwood, pulp and paper and other forest products all showed increases. Compared with the same week last year the loadings were heavier by 4,405 cars.

Commodities	Total for Canada		Cumulative totals to date		
	Jan. 16,	Jan. 9,	Jan. 10,	1926	1925
Grain and grain products	9,275	10,861	6,607	20,136	12,418
Live stock	2,143	2,477	2,473	4,620	5,606
Coal	5,929	6,163	6,478	12,092	14,116
Coke	390	514	315	904	632
Lumber	2,900	2,259	2,645	5,159	5,190
Pulp wood	4,037	3,076	4,329	7,113	7,394
Pulp and paper	2,702	2,571	1,930	5,273	3,962
Other forest products	3,449	2,400	2,820	5,849	5,066
Ore	1,468	1,326	1,170	2,794	2,240
Merchandise, l. c. l.	14,079	13,645	13,347	27,724	26,085
Miscellaneous	10,421	9,267	10,274	19,688	19,657
Total cars loaded	56,793	54,559	52,388	111,352	102,366
Total cars received from connections	33,544	29,569	33,429	63,113	63,382

Frisco Buys Large Interest in Rock Island

Working control said to have been obtained—Nature of future operating relations undetermined

THE St. Louis-San Francisco has acquired a substantial interest in the Chicago, Rock Island & Pacific, for the purpose of eventual consolidation, according to a statement issued by E. N. Brown, chairman of the board of directors of the Frisco, on January 22. Although the exact amount of the Frisco's holdings in the Rock Island was not made public, the understanding was permitted that it constitutes a working control. It is reported that the Frisco has 180,000 shares of Rock Island common stock with a 30-day option on 45,000 more shares, a total of about 15 per cent of the voting stock. The purchase will be financed partly through the sale of \$5,000,000 of two-year, 5 per cent notes, the balance being paid from cash reserves of the Frisco. The statement of the Frisco was as follows: "E. N. Brown, chairman of the board of directors of the St. Louis-San Francisco, stated that the St. Louis-San Francisco has purchased a substantial amount of stock of the Chicago, Rock Island & Pacific. It is believed that this purchase should be of material benefit to both companies."

At the same time, Speyer & Co., bankers for the Frisco, made this announcement: "At the office of Speyer & Co., it was confirmed that they and Messrs. J. & W. Seligman & Co. have sold a large block of Rock Island shares to the St. Louis-San Francisco. Speyer & Co. have for many years been interested in Rock Island affairs, both as stockholders and bankers for the company. They and their friends have lately considerably increased their holdings and retain a large interest in Rock Island shares. They expect that this new community of interest will lead to closer traffic arrangements between the Rock Island and the Frisco, with which the two banking firms have been identified, and will result in considerable benefit to both companies."

Subsequent statements by representatives of the bankers and of the Frisco and the Rock Island indicated that determination of the actual working arrangement under which the two roads will be united, will wait upon the decision of the Interstate Commerce Commission approving or disapproving the purchase of the interest in the Rock Island by the Frisco. In the meantime, the prevalent opinion is that in the event the stock purchase is approved, both roads will continue to maintain their corporate identities and will be operated by separate official organizations as such, at least until more favorable consolidation legislation is passed by Congress.

Purchase a Surprise

The announcement of the purchase of an interest in the Rock Island by the Frisco came as a complete surprise to railway and banking circles. In spite of repeated denials the understanding has persisted that the Rock Island would eventually be taken over by the Southern Pacific. The Rock Island figured in a proposed merger last year when a controlling interest in the St. Louis Southwestern was purchased from the Gould family. This transaction failed to win the approval of the Interstate Commerce Commission, however, partly because of opposition by the Frisco, and the Rock Island disposed

of its interest in the Cotton Belt to the Kansas City Southern.

The largest single interest in the Rock Island has heretofore been held by Hayden, Stone & Co., a New York banking house. Charles Hayden, senior partner of the firm, is chairman of the board of directors of the Rock Island. Statements issued by Mr. Hayden intimating that there was some doubt as to the extent of the stock of the Rock Island acquired by the Frisco indicated that he had not been consulted when negotiations for the purchase were being made, although reports are current that a large block of stock was recently purchased from Hayden, Stone & Co. by Speyer & Co.

In the purchase of the Rock Island by the Frisco, history is repeating itself to a certain extent, for from 1903 to 1909, a similar relation existed, although in that case the Rock Island was the owner and the Frisco the owned. Beginning in 1903 the Rock Island began the purchase of Frisco common stock, ultimately acquiring a quantity with a par value of \$28,940,300. This control of the Frisco carried with it the control of the Chicago & Eastern Illinois and the Evansville & Terre Haute. The Rock Island and the Frisco were operated individually through the period of joint interest, which ended late in 1909 when the Rock Island disposed of its holdings in the Frisco to B. F. Yoakum and associates.

Extent of Frisco-Rock Island System

The consolidation of the Rock Island with the Frisco and its recently acquired subsidiaries including the Muscle Shoals, Birmingham & Pensacola, would make a system with an aggregate length of approximately 13,000 miles of line. Thus it would be one of the largest railroad systems in point of mileage in the United States. Its lines would cover the middle west, extending from Minneapolis and St. Paul, Minn., on the north, to the gulf ports of Galveston, Tex., and Pensacola, Fla., on the south; from Denver and Colorado Springs, Colo., on the west to Chicago, St. Louis, Memphis and Birmingham on the east.

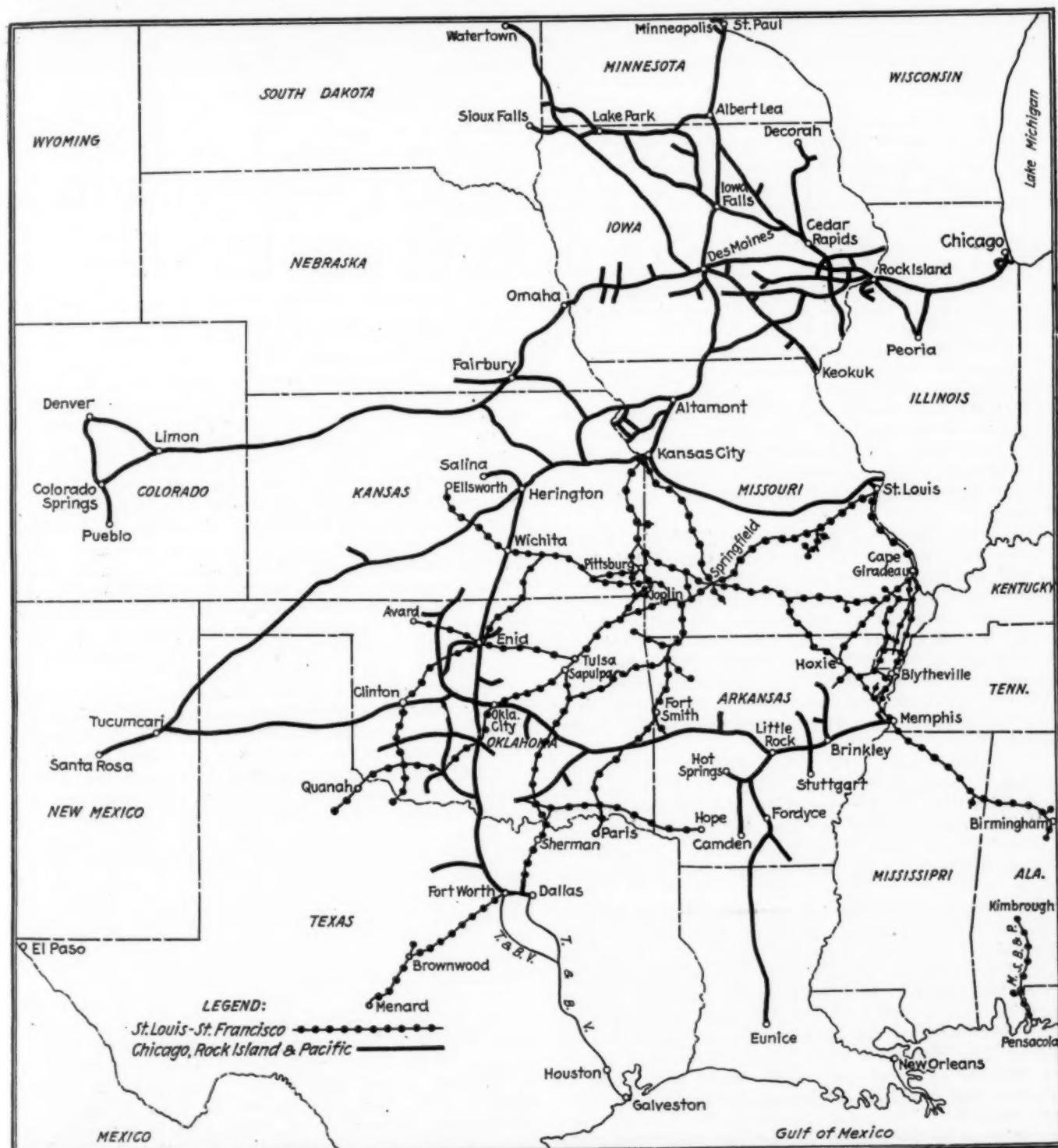
The Frisco, operating 5,399 miles of line, has main lines extending from St. Louis to Fort Worth, Tex., and to southwestern Oklahoma; from Kansas City to the same points; and from Kansas City via Springfield, Mo., to Memphis and Birmingham. There is also a large branch line mileage. The Frisco crosses the Ozark mountains and as a result has a large number of heavy grade districts. This condition is being corrected, however, by a number of grade reduction and realinement projects.

The traffic on the Frisco is very diversified. From 12 to 14 per cent of its revenue tonnage has for some time been refined petroleum and its products. Coal constitutes about 22 per cent and is secured from several districts including the Oklahoma fields, the Arkansas district, the Pittsburg, Kan., district, and the Alabama district in the neighborhood of Birmingham. Products of agriculture constitute about 13 per cent of the total revenue tonnage and the road is securing an increasing tonnage of high grade commodities—cotton, grain, canteloupes, etc.—from northeastern Arkansas and southeastern Missouri.

By its recent purchase of the Muscle Shoals, Birmingham & Pensacola, the Frisco secured what will ultimately be an outlet to the Gulf of Mexico. The construction of a connecting link from the southeastern terminus of the Frisco at Birmingham to the northern terminus of the Muscle Shoals line at Kimbrough, plans for which are now being prepared, will be necessary before a physical connection with the Gulf is established. The Frisco spans the distance between its lines at Birmingham and the Muscle Shoals, Birmingham & Pensacola by trackage rights over the Southern. The M. S., B. & P., is now being rehabilitated. The I. C. C. in its decision approving the Frisco M. S., B. & P. last November stated that the acquisition was in the public interest, even if the pro-

posed line connecting it with the Frisco should not be constructed.

The Rock Island, operating 8,049 miles of line, most of which is owned either by the Rock Island itself or by its Texas subsidiary, the Chicago, Rock Island & Gulf, extends over a wide area in the middle west, its lines entering no less than 14 states. Like the Frisco, its traffic is well diversified. About 25 per cent of its tonnage is agricultural products, about 14 per cent coal and about 25 per cent manufactures and miscellaneous. Its main lines extend from Chicago and Minneapolis and St. Paul, to Denver, Colo., and to Santa Rosa, N. M., where connection is made with the Southern Pacific, affording a short line to southern California. Other main lines



The St. Louis-San Francisco and Chicago, Rock Island & Pacific Systems

extend from Kansas City to St. Louis, Kansas City to Fort Worth and Dallas, and Memphis, Tenn., to Tucumcari, N. M. The road has been at a disadvantage to a certain extent in competing for traffic because of the fact that many of its competitors are stronger financially and in a number of cases have more direct routes between important traffic centers. For example, it numbers among its competitors strong roads like the Santa Fe, the Burlington, the Union Pacific, the North Western and the Missouri Pacific. It is a relatively long line, furthermore, between Chicago and Kansas City, Chicago and Denver, Chicago and Fort Worth, St. Louis and Denver, and some other points.

The Frisco and the Rock Island have been able to effect great improvements in their financial conditions in recent years. Both roads have been through receiverships in the last ten years, that of the Frisco beginning in May, 1913, and ending in November, 1915, and that of the Rock Island beginning in April, 1915, and ending in June, 1917.

Since the reorganization, Frisco earnings have showed a steady improvement. The net railway operating income in 1924 was \$21,072,890, which compared with the standard return for operations during federal control or average annual net railway operating income for the three years ended June 30, 1917, of \$13,423,400. This was an increase of about 57 per cent. In 1924, the Frisco had net income after fixed charges of \$21,012,374, and there was left after payment of interest on the adjustment and income bonds, a total of \$6,030,202, equivalent after allowance for 6 per cent dividends on the preferred stock to \$12.42 a share on the common stock. The Frisco's 1925 report is not yet published but it will report slightly better earnings than in 1924. An initial quarterly dividend at the full rate was paid on the company's non-cumulative 6 per cent preferred stock on November 1, 1924. An initial quarterly dividend at the rate of 5 per cent was paid on the common stock in January, 1925, and the rate was increased to 7 per cent with the October payment.

The Rock Island has paid regular dividends on its 7 per cent and 6 per cent preferred stocks since their issue. No dividend has yet been paid on the common. The net railway operating income of the Rock Island in 1924 was \$17,713,589, whereas its standard return for operations during federal control was \$15,883,891, the 1924 total representing a 12 per cent increase. Net after fixed charges in 1924 was \$6,835,221, and the balance after preferred dividends was equivalent to \$4.36 per share of common stock. Earnings in 1925 were slightly better than in 1924.

Of the two roads, the Frisco has had the greater increase in business in recent years. In 1924, as compared with the calendar year 1916, the Frisco's revenue ton-miles increased 27½ per cent, but the Rock Island's increased 22 per cent. The Rock Island's ton-miles in 1924 were about 66 per cent greater than those of the Frisco.

The strategy of a Frisco-Rock Island merger is more apparent from a financial standpoint than from a traffic standpoint. Its most important effect will be on the general consolidation situation in the Southwest. The Frisco has recently found itself in an uncertain position since its chief competitors, the Missouri Pacific, the St. Louis Southwestern, the Missouri-Kansas-Texas, and the Kansas City Southern were being consolidated into a few systems of great size which might well wield an influence that would be detrimental to the Frisco's inter-line business. Thus the Missouri Pacific has been strengthened by the control of the Gulf Coast Lines, the International-Great Northern and the Texas & Pacific, and the Kansas City Southern, one of the Loree proper-

ties, has bought heavy interests in the Katy and the Cotton Belt.

For the Frisco to retain its business while standing alone in the midst of a group of large and powerful competitors would have been extremely difficult. One step out of this dilemma was taken when the Muscle Shoals, Birmingham & Pensacola was acquired. This will have the ultimate effect of affording the Frisco an outlet to the Gulf of Mexico, a thing that it has needed very badly and which it lost through its failure to absorb the International-Great Northern. Now with its apparent purchase and control of the Rock Island it has tremendously broadened its field of activity and has secured a railroad whose steadily improving business and financial condition makes it a valuable prize from that standpoint.

Another cause of the merger is held by some to be the fact that the Frisco has a high earning power and capitalization but a low physical valuation while the Rock Island has a lower earning power and capitalization but a higher physical valuation. The Frisco's tentative valuation as of June 30, 1918, is \$190,331,909, while its capitalization on December 31, 1924, was \$351,744,964. The Rock Island on the other hand, had a valuation as of June 30, 1921, of \$388,277,342 and a capitalization on December 31, 1924, of \$387,282,310. It is considered that the Frisco's high earning power and low valuation would be partly balanced by the Rock Island's lower earning power and higher valuation.

The advantages accruing to the Frisco in control of the Rock Island may not all be apparent at this time. Enough do appear, however, to make the situation appear favorable to both roads. There is little duplication of facilities. The principal junction points are at St. Louis, Kansas City, Wichita, Fort Worth, Memphis and Oklahoma City. The effect of a consolidation on the freight traffic of the Frisco and the Rock Island should be beneficial. The Rock Island to a certain extent, and the Frisco to a larger extent, should participate more largely in the expected betterment of conditions and business in the central west and in the southwest. From the Rock Island standpoint, it will be able to secure an increased traffic through the Chicago gateway, because of the larger territory the combined system will cover. The Frisco, on the other hand, will benefit to an even larger degree, drawing from the central western and western lines of the Rock Island traffic destined for export or for seaboard points via Pensacola and the Gulf of Mexico.

An important need of the Frisco-Rock Island system would appear to be a St. Louis-Chicago line. When the Rock Island controlled the Frisco in 1903 and afterward, this was furnished by the Frisco-controlled Chicago & Eastern Illinois. Under present conditions the Frisco loses a large amount of the business it originates for eastern destinations to connecting lines at Memphis and St. Louis. The acquisition of the Rock Island will probably have no appreciable effect on this condition except on traffic originating on or consigned to points on the present southwestern extremities of the Frisco. A Chicago-St. Louis line would provide two main routes from Chicago to the southwest, one via St. Louis and one via Kansas City, and would go far toward making the Frisco-Rock Island system a compact unit.

On Wednesday E. N. Brown, chairman of the board of the St. Louis-San Francisco, and J. M. Kurn, president, and Jesse Hirschman, representing Speyer & Co., bankers for the Frisco, were elected members of the board of directors of the Rock Island. This gives the Frisco interests four representatives on the Rock Island board of directors, because A. A. Cook already a member of the board is also a representative of Speyer & Co. The three new directors succeeded Henry Bruere, Carl Nyquist and A. J. Brousseau.



Train and Bus Schedules are Fitted to One Another on the Boston & Maine

Railway and Highway Transportation Agencies Should Cooperate

Trucks afford auxiliary means whereby carriers can handle less than carload freight more economically

COOPERATION instead of competition between the railroads and the highways will result from the discussions between road builders and railway officers at the convention of the American Road Builders' Association held at Chicago on January 12 to 16, according to William H. Connell, president of the association.

Throughout the meeting it was generally conceded that the railroads and motor vehicles were dependent upon each other rather than competitive. Addresses made by Charles H. Markham, president of the Illinois Central, and Frank H. Alfred, president of the Pere Marquette, appeared in the *Railway Age* of January 16. An address made by T. R. Dahl, vice-president of the White Company, after the *Railway Age* of that week went to press, is published herewith.

Is the Highway Vehicle Unduly Aided By Present Tax Methods?

Motor vehicles, particularly the motor trucks, pay their full quota for the use of the highways in the United States, according to Mr. Dahl. In his address he disagreed with a statement made by Mr. Markham that motor vehicle operations are destroying highways furnished by the public, including the railways, without paying an adequate amount for their use of them. Mr. Dahl also pointed to the use of highway vehicles by an increasing number of railways as proof that they will soon take their logical place in the transportation machine. Mr. Dahl's address follows in part:

The motor vehicle industry through its national association early realized that for its own protection it must not only support but actually initiate laws regulating the operation of trackless transportation vehicles. It appreciated that an extended highway program would

require that motor vehicles should bear their proper share of taxation. It understood that when such motor vehicles began using the public highway for the conduct of its business such use must be reasonably regulated. The result was that the day of the jitney bus was short. Legislation was enacted in practically every state regulating the operation of motor vehicles, taxing their use of the public highways and regulating the use of the public highways for the conduct of business. It is the use of the highways for business that brought this facility into conflict with other transportation agencies, principally the steam and electric railways.

It soon became apparent, however, that when representatives of the various transportation agencies got together they found they had a good deal in common and that more might be accomplished in cooperating in working out their mutual problems than by quarrelling with each other. The result has been that the problem has largely narrowed itself down to this: What is the proper sphere of operation for the highway vehicle?

The committee known as Committee Four, appointed by the United States Chamber of Commerce, composed of a representative membership of railroad and motor industry officers, shippers and the public, after working some six months, reported that the great sphere of operation of the motor trucks as related to steam railroads was in terminal work, store door delivery and in short-haul zones within which the motor truck is pre-eminently fitted for service. The motor vehicle industry is highly desirous of a closer contact with the steam railroads of the country in attempting to work out the detail of such operations. There are many problems which must be solved.

Mr. Dahl's Interpretation of Tax Facts

Are highways built at the public expense? Who is this public which pays for the highways? What do steam

railways pay toward highways? Are motor trucks competitors of steam railways?

The answer to these questions lies in determining what part of road expenditures, if any, the motor vehicle pays in taxes. Taxes on motor vehicles during 1924 amounted to half the total highway bill of the nation. This bill, according to the figures of the Bureau of Public Roads of the United States Department of Agriculture, amounted to \$1,181,000,000. Motor vehicle taxes amounted to \$551,000,000. These taxes collected from motor vehicles equal 92 per cent of the expenditures for the state and federal road systems, the highways which carry 80 per cent of the traffic. State license fees alone were more than twice the amount required for the upkeep of the state roads. Taxes collected by the federal government from motor vehicles have amounted to twice as much money as the federal government has expended for federal aid on highways. The figures conclusively prove that the motor vehicle paid 42 per cent of the entire highway program of the country and actually paid 92 per cent of the cost of the highways which carry 80 per cent of the traffic.

There are 20,000,000 motor vehicles in this country today, an average of one for almost every family. That astounding fact is better appreciated when one realizes that there are actually more automobiles in this country today than there are telephones. Who but these same families owning motor vehicles pay the general taxes that are spent for the construction of highways? The motor vehicle owner is the largest single tax-payer toward general highway purposes over and above the 42 per cent of the highway bill which he pays in special taxes.

The railroads complain very bitterly of paying a large part of the cost of highways for the use of a competitor—the motor vehicle. What part of the highway bill do they pay? In this same year of 1924 they paid \$34,163,000 of the \$1,181,000,000 highway bill, or exactly 3.6 per cent. What return do the railroads get for this 3.6 per cent of the highway bill that they pay? It is immediately evident that every ton of freight handled by the railroads, except such as is loaded at industrial sidings, must be carried both to and from the rail head over the highway. Providing a road bed for freight to and from the rail head is very cheap for the railroads at 3.6 per cent of the cost. The revenue from motor products given to the railroads in the same year actually amounted to over \$400,000,000. This \$400,000,000 is actually automotive freight revenue and does not include freight revenues on raw materials, coal, steel, etc., going into motor vehicle plants. Accordingly, if the entire highway bill of the steam railroads is charged against purely the automotive revenue, that tax bill is only 8½ per cent of the revenue derived from automotive products. I need not assure you that new business cannot be obtained by motor vehicle manufacturers for any percentage approaching a cost of 8½ per cent for that business.

I submit that no one, passenger car or truck operator, who annually pays a license fee for the right to use his car or truck and who regularly pays a gasoline tax of 2, 3 and 4 cents a gallon in 44 states of the union, every time he purchases gasoline, can be deluded into the belief that the use of the highway is free.

Private passenger cars, constituting 88 per cent of the motor vehicles using the highways not being used in the carrying of freight, must be left out of any computation as to the amount of charge per ton of carrying capacity that vehicles pay for the use of the highway. In confining the computation therefore to trucks, the United States Department of Agriculture surveys establish that the average license fees paid by all motor trucks in 1924 was \$21.10 per truck. The percentages of the various sizes of trucks rated according to capacity are:

3/4 ton and less	10.8 per cent
1 ton and less	71.4 per cent
1 1/2 ton	7.7 per cent
2 ton	2.2 per cent
2 1/2 ton	3.3 per cent
3 1/2 ton	1. per cent
5 ton	1.8 per cent
Over 5	1.3 per cent

making an average capacity of motor trucks in use of 1 1/4 tons. The average license fee per truck being \$21.10, the fee per ton of carrying capacity is therefore \$16.90.

The facts herein given and the figures quoted have been established by surveys of the Bureau of Public Roads of the United States Department of Agriculture, which is the recognized authority on highways in this country. The department has also established, through investigation, a very instructive comparison between the ratio of tax paid for the use of highways to the gross operating revenue of motor trucks as compared with the charges of railroads for maintenance of way and structures against their total operating incomes. Without going over the detailed figures of the computation the conclusion reached is that motor trucks actually pay 10 per cent of their gross operating revenue for the use of the public highways, whereas the steam railroads over a 12-year period from 1911 to 1922 charged an average of 13.3 per cent of their total operating income for the maintenance of way and structures. When it is considered that motor trucks constitute only 12 per cent of the motor vehicles using the public highways, whereas the steam railroads use their right of way exclusively, it is apparent that the motor truck has no advantage over the steam railroad, but is actually at a disadvantage when considering the percentage of operating income which they must pay for the partial use of the public highway.

Use of Commercial Vehicles by

Other Transportation Agencies

No better proof of the place of the motor bus and truck in transportation could be offered than the use of such vehicles by the steam and electric railways today. The steam railways are using motor trucks in terminal work, interline hauls, replacing local trains by motor trucks, using rail cars, etc. Fifty-one railroad companies are today operating motor trucks. An excellent example of the terminal use of the motor truck is the seven-year experience in Cincinnati where all less than carload freight is handled by motor trucks between sub-stations in that city. An average of two days and fourteen hours was required to move a freight car a few miles between stations. Now similar distances are covered in 14 minutes by 15 five-ton trucks which transfer freight from terminal to terminal. The trucks also tap the suburbs bringing in freight in ample time for daily distance shipment in bulk and saving anywhere from one to fourteen days. This service releases in a year 66,000 box cars from trap work for profitable distance haulage. This cost is 80 cents per ton as against \$1.20 to \$1.60 by previous methods.

Today the Pennsylvania and the New York Central are using the motor trucks in varied capacities to supplement existing facilities and to enable them to meet more efficiently the ever increasing demand for transportation. The Boston & Maine is installing a motor transport system to replace hundreds of miles of unprofitable rail operations. The New York, New Haven & Hartford is engaging in store door delivery. Scores of railroads are using gasoline rail cars to replace steam trains. The Great Northern is inaugurating a great bus system. The modern railroad man appreciates that he is in the business of furnishing transportation to the public and is using the motor truck and bus as an arm of that service.

The motor vehicle industry subscribes to the regulation of motor buses as public utilities in the same manner as

steam and electric railways are regulated. We believe that motor buses are quasi-public corporations and should as such be regulated as monopolies. We believe this is true not only in intrastate operations but also in interstate operations. We therefore favor the enactment by Congress of a law regulating such operation. We believe that such operations are primarily of local interest and concern and that therefore state public utility commissions of the states through which the lines operate should actually regulate such operation so far as that power can constitutionally be delegated under the commerce clause of the federal constitution.

We believe the case of the motor truck presents an entirely different picture. The motor bus is essentially a monopoly, or probably more properly termed, a quasi-public corporation. Where the only transportation offered is a motor bus line it is essential for the service to the public that such a facility be regulated by a public commission, both as to service and rates of fare. This is not at all true of the motor truck. A motor truck common carrier is subject to competition of both the motor truck contract carrier and the private trucker. The user of a common carrier truck line has therefore several options if he is dissatisfied with service or rates. He can employ a contract carrier or he can properly make a capital investment in his own business to purchase his own trucks to carry his freight. Motor trucks therefore, being subject to other motor truck competition, do not partake of a public nature and are therefore not quasi-public corporations or monopolies. Competition gives to the public the protection it needs without regulation by a political body and therefore motor trucking is in the same class as any other competitive business. In the matter of interstate operation there are a number of practical reasons why the motor truck should not be regulated by Congress, but one I believe is sufficient. Only one per cent of the motor trucks in operation in the country today are engaged as common carriers in interstate business.

Motor Trucks Not Railway Competitors

The motor truck industry contends that it is not a competitor of the steam railroad and makes that contention because motor trucks are engaged principally in a service of distribution to and from railroads, in short hauls which are unprofitable to railroads and in the extension of transport service in the areas not served by a railroad. This contention is not merely an opinion, but is based on actual facts as developed by the Bureau of Public Roads through surveys made in the various states in the union. In Connecticut, for instance, it was found that 40 per cent of the total tonnage of motor trucks is moved less than 10 miles, and that nearly 70 per cent is moved less than 30 miles. In California 25 per cent of the total tonnage is hauled less than 10 miles and 60 per cent less than 30 miles, while the tonnage which is hauled more than 70 miles is less than 20 per cent. In Cook county, Illinois, 24 per cent of the movement is less than 10 miles, 75 per cent less than 30 miles and less than 3 per cent moves further than 100 miles. These percentages are based on actual surveys and that means actual traffic counts on the roads by observers for the Bureau of Public Roads. This service is distinctly a service of distribution from centers. It is a service which does not aim to move large bulk day after day between the same points. Within the short-haul limits it is taking some of this business away from the railroads and the railroads should be glad to see it go because they have lost money on it.

In all of the cases investigated it is immediately apparent that the business which the motor truck is doing is limited to a short-haul movement. The Bureau of

Public Roads figures, based on their surveys, prove therefore that the motor truck is not a competitor in any volume of freight with the steam railroad except in very short-haul movement, and if it is true, as has been repeatedly stated by the presidents of our largest railroads, that the short-haul business is unprofitable, then the motor truck has relieved the steam railroads of unprofitable use of its freight cars for long-haul profitable freight. In addition it has placed in the hands of the railroads an auxiliary means of transportation whereby it can more economically handle its less than carload freight and effect tremendous economies in relieving its terminal congestion. These contentions are also supported by experience and you have but to examine the use made of motor trucks by the Pennsylvania and New York Central railroads in the handling of local less than carload freight, and the terminal operations of the Cincinnati Motor Terminals Company, to convince you of the tremendous economies and facilitated service which the railroads can obtain through the use of the motor truck in these capacities. There are now 51 railroads using motor trucks as part of their service compared with 33 a year ago.

Motor competition is not the cause of track mileage abandoned by the railways. Since 1916 the railways have abandoned more than 3800 miles of track. The reasons ascribed by the railways themselves, as appears in the records of the Interstate Commerce Commission as required by the Transportation Act of 1920, are that 58 per cent was abandoned on account of the exhaustion of natural resources, 30 per cent through competition by other railways, 1.3 per cent due to rearrangement of lines, 7.3 per cent from miscellaneous causes and but 4.3 per cent because of highway competition.

Mr. Dahl's Conclusions

The conclusion is inevitable, that the facts as determined by experience, investigation and surveys establish—

First, that the motor vehicle and particularly the motor truck pays its full quota of taxes for the use of the public highways.

Second, that the motor truck has no advantage over any other carrier because of its use of the public highways because it not only pays more per ton of capacity in taxes for the use of its road bed than the railways charge per ton of capacity for maintenance of way and structures, but also pays approximately the same percentage of its operating income in taxes for highway use that the railroads charge for maintenance of way and structures.

Third, the motor truck is not a competitor of the railways except in short-haul less than carload lot movements which the railway companies themselves admit is unprofitable business.

The greatest problem in this country today is the problem of distribution. Economists admit that today, on the average, it costs more to distribute than it does to produce. We are living in a mechanical age in which quantity machine production has pared production costs to the bone. If there is to be any further material reduction of living costs in this country it must be in the reduction of the distribution part of the cost of merchandise and products. Produce is transported over the highway from the farm, the forest, the mine and the factory, from wholesale to retail stores and from store to consumer, four, five and even ten times to the once or twice it is shipped by rail or water. Here is the part of the cost that must be reduced. The motor truck is the development of this century to do the job. Why hamper it? Use it. It is the facility the railroads of this country need in meeting the transportation requirements of this generation.

Rate Hearing at Kansas City Concluded

THE hearing before the Interstate Commerce Commission on the application of western carriers for an increase of 5 per cent in freight rates which opened in Kansas City, Mo., on January 4, was concluded on January 26. March 4 was set by Mr. Aitchison as the date on which the carriers must file their briefs of the case.

The shippers must have briefs in reply filed by April 3 and the roads' rebuttal briefs must be filed by April 24. Oral arguments before the commission will follow the filing of the briefs.

On January 25 the roads filed a conservative estimate with the commission of their annual earnings on the basis of the increase in class freight rates for which they have petitioned. This amount of additional earnings totalled \$11,528,924 and was compiled upon the request of John E. Benton, general solicitor for the state commissions. The basis used in computing the estimate was in general an average advance of 25 per cent in the class rates east of the Missouri river, including the Missouri river cities and the territory on the east of the line of the Chicago, Milwaukee & St. Paul from Sioux City, Ia., to Sioux Falls, thence to Omaha, Neb., to the Twin Cities thence along the Great Northern to Hinckley, Minn., and the Northern Pacific to Duluth. West of that line an approximate increase of 10 per cent and a 5 per cent increase on through business from points east of the Missouri river and the line described above and points west.

W. H. Hoffman, secretary of the New Orleans Grain Dealers' Association, testified that if Kansas City and the southwest had river transportation to St. Louis a large amount of grain could be purchased in Kansas City territory for shipment to New Orleans and then to foreign markets.

The rail basis, he said, is so high that it is impossible to meet export grain bids. He stated that out of 50,000,000 bu. of grain handled at New Orleans last year, 52 per cent was shipped to that port by barges.

A. M. Corp, statistician for the Kansas Public Service Commission, testified that the roads have earned more than 5½ per cent on the fair value of their properties in 1925.

A total of 167 railroads was used as a basis for arriving at the earnings. The testimony was intended to show that the returns for 38 roads referred to as Class I lines of the western district, for the first ten months of 1925, was 5.64 per cent. Mr. Corp used the Interstate Commerce Commission figures for the valuations, the total value of the 38 Class I roads being set at \$2,327,680,152. According to the witness, the 38 roads set up a claim for \$127,581,245 for working capital and this was reduced by the commission to \$54,897,644.

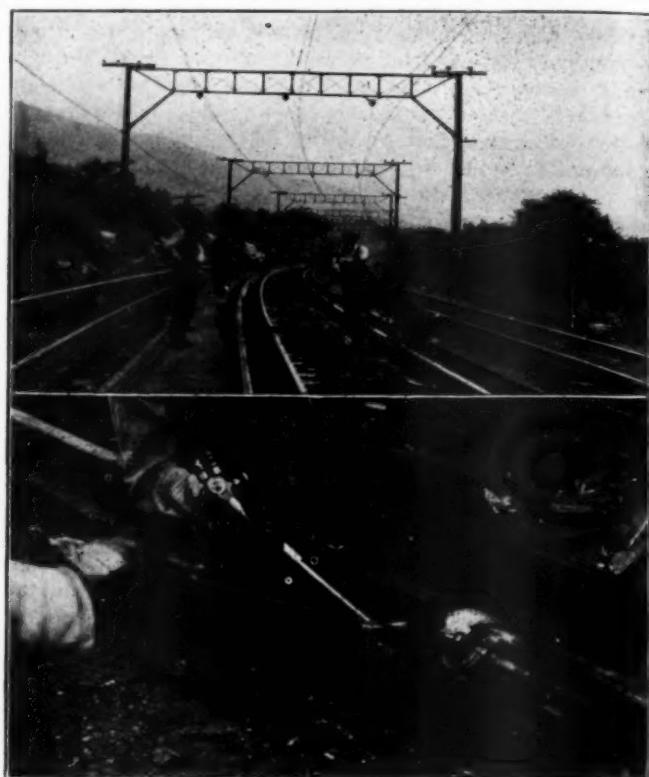
H. R. Park, traffic manager of the Chicago Livestock Exchange, produced figures to show that freight charges from the corn belt area to Chicago have increased 52 per cent over the 1913-1917 levels. He used as a basis the cost of 687 cars of livestock shipped to Chicago in 1914 and the same number of cars in 1925 which showed that freight charges in 1915 on 687 cars were \$32,917 and the net returns to the shipper on his livestock were \$1,155,301. In 1925 such a shipment entailed \$53,162 in freight and a net return to the shipper of \$1,335,887.

Additional testimony presented to the commission to show the condition of other industries included that of livestock, agriculture, grain, brick and clay, and salt producing interests.

Boston & Maine Installs Welded Bonds

AS weld bonds have been installed by the Boston & Maine on the electrified section which extends through the Hoosac tunnel, near North Adams, Mass. They are also being applied at other points for signal track currents.

A quality of new rail laid during the past season has been bonded with acetylene welded bonds and the operating department is well satisfied with the installation. The



Gas Welded Bonds Being Applied to New Rail

photographs were taken at the beginning of the work and show the new rail being bonded before it was thrown into gage. It is expected that all new rail on this property will be bonded with gas weld bonds including both the electrified zone and automatic signal territory.



Locomotive Works, Chrzanow, Poland

Wood Preservers Hold Meeting at Cleveland

Technical problems and commercial aspects of timber treatment actively discussed at annual convention

THE twenty-second annual convention of this association, held at the Cleveland Hotel, Cleveland, Ohio, on Tuesday, Wednesday and Thursday of this week, was concerned primarily with methods, materials and improved practices from both the scientific and the practical viewpoints, comprising scientific studies of the chemical and physical developments in this field, as well as reports of service tests on wood subjected to preservative processes and used for various purposes, chief among which is the railroad crosstie. However, in line with the tendency of recent years in this association, considerable attention was also given to the commercial phases of wood preservation, primarily with a view to extending the application of preservatives to wood utilized in fields where wood is now used almost entirely in its native state. Foremost among the papers coming under this head was a report on the present status of the treatment of car lumber, while closely allied to this subject was a report on the activities of the Service bureau of the association, and a paper on publicity in the wood preserving industry by E. T. Howson, western editor of the *Railway Age*.

Supplementing the reports concerned with crossties and car lumber, the railways were represented by an address by C. E. Denney, vice-president and general manager of the Nickel Plate. All sessions of the convention were presided over by S. D. Cooper, assistant superintendent of timber preservation, Atchison, Topeka, & Santa Fe.

During the business session on Thursday the following officers were elected: President, C. F. Ford, superintendent tie and timber department, Chicago, Rock Island & Pacific, Chicago; first vice-president, O. C. Steinmayer, superintendent, timber preservation, Canadian Creosoting Company, Toronto, Ont.; second vice-president, H. R. Condon, assistant forester, Pennsylvania System, Philadelphia, Pa., and secretary-treasurer, E. J. Stocking, members of the executive committee; F. S. Shinn, supervisor treating plant, Chicago, Burlington & Quincy, Galesburg, Ill., and J. S. Penney, general superintendent of plants, T. J. Moss Tie Company, St. Louis, Mo.

An abstract of those reports and papers of special interest to railway men follows:

Report of the Committee on Car Lumber

The general question that certain timbers in certain railway freight cars should be treated with some preservative is being answered slowly but surely. To say that any great percentage of the cars with wooden parts is being built with treated wood would be an exaggeration. However, that the policy of preservative treatment of certain wooden parts of cars is bearing fruit, your committee has no longer any doubt, because of the increased use that has been made during the year.

We went on record last year to the effect that certain wood parts of freight cars could be treated successfully. So far we have had no criticism of our recommendations. We also believe that these suggestions are just as sound as they were then, and proved, because more treated car

timber was used this last year than ever before.

We are frank enough to believe that though the modern trend, particularly on the eastern lines, is to make cars as nearly all steel as it is possible to build, nevertheless, there are certain types of cars, such as stock cars which from their nature of utilization will always contain a large percentage of wooden parts and which, also, present the most likely as well as the easiest type of part-wood car to treat efficiently.

Certain lines continue to recognize the increased overhead, non-profitable burden caused by the greatly increased weight of the all-steel car in comparison with the composite car. The committee continues its attitude of sponsoring no specifications covering the details of car manufacture in so far as the materials are concerned, but believes its functions should be confined to recommendations leading toward extending the life of those parts of the cars, which the car builders care to specify in wood.

So far as the committee has been able to learn, the great majority of the cars built this year using some parts of treated wood, have been stock cars. Two railroads which have never used treated car material before have each built 500 new cars with practically every wooden part creosoted. Three treating companies report a rather large production in the aggregate of treated wood for cars. Others give little concern to the possibilities of the situation from a commercial standpoint.

Of the railroads owning and operating their own treating plants, various reports are available. One railroad in the Southeast reports definite progress in the treatment of a large quantity of wooden car material. An Eastern railroad has used quite a quantity of treated nailing strips and is making a move to treat oak and gum flooring.

The facts developed during the past year have shown that the committee was correct in the assumption that for the present the car companies would depend on the regular commercial treating companies to furnish the treated wood for new cars.

As for those railroads which have treating plants of their own, the capacities in many cases are such as will not warrant the engagement of any new lines of preservation, or these plants are located on lines definitely set against the use of any wood whatsoever in cars and prone to consider the treatment of any wooden part as being prejudicial to the development of non-wooden substitutes therefor.

The suggestion that no railroad is likely to make much progress in the treatment of wood for cars until it builds or has its treating plant near or in the car shops, still holds good, and we regret to advise that so far we have no record of any railroad building any such plant at its car shops. The expense incident to building such plants continues to be the principal difficulty.

No new development has arisen during the year covering new preservatives. Creosote, zinc chloride, and sodium fluoride remain the standard preservatives. Each of them has definite possibilities and limiting restrictions in its utilization. When odor and color are not the deciding factors, creosote maintains the lead. In fact, dur-

ing the year, we have not heard of any other preservative being used, except in one special case where petroleum is being fortified with beta-naphthol and pine oil.

The great need of this particular sphere of the treating industry is one that applies to the industry as a whole. We need an odorless toxic preservative, which may be used for the treatment of wood, which has the fiber binding properties of an oil and does not have the distinct disadvantage of requiring water as a carrier. No cheap, quick, efficient method has come to the attention of the committee whereby the injected water in preservatives requiring water as the carrier may be easily, promptly and cheaply eliminated. Zinc chloride, sodium fluoride, sodium naphthalate, each offers effective toxic qualities, but all thus far require the use of water.

Box, refrigerator and any type of closed car require the use of odorless preservatives. The problem of providing a preservative over which paint may be applied satisfactorily, has been solved to the satisfaction of one railroad, which recommends the use of petroleum, pine oil and beta-naphthol, but thus far this combination is not free from odor.

For refrigerator cars, the committee submits the suggestion that sodium fluoride be given consideration as the most likely preservative at this time. Its success as a preservative has been fully confirmed and its use for cars is suggested when any odor is objectionable. It has the advantage of easy impregnation, requiring no special equipment. It must be remembered that the water used to carry the preservative into the wood should be eliminated before fabrication. Its low solubility factor should warrant its use for the humid and moist conditions prevalent in certain parts of the refrigerator type cars.

The committee believes that very definite progress has been made by the railroads during the past year in adopting the use of treated wood in cars and this warrants the conclusion that, as other railroads become cognizant of the very definite savings incident therefrom, more and more treated wood will be used in cars.

A Plea for Research in Wood Preservation and Forestry

By Aldo Leopold

Forest Products Laboratory, Madison, Wis.

Your industry and our profession are both good samples of modern "research." We have piled up a great mass of facts—information on what happens—but we have in general neglected to find out why things happen. We have learned the peculiarities of trees, and railroad ties, and creosote, and the other things we work with, but we have not penetrated the reasons for those peculiarities.

Take, for instance, the injection of preservatives. By juggling a few of the variables like time, temperature, and pressure you have learned how to treat the easier woods in a satisfactory manner. But it doesn't look as if these same methods are going to tell us how to penetrate refractory woods, or prevent checking due to heat-injury, or to completely penetrate building lumber.

Now the practical point is that these researchers who are digging into basic questions about wood are the men who from now on are going to make possible the improvements in the uses of wood. We will progress from now on just as fast as research in these basic materials lays foundations for it, and no faster.

We all know that in the last few years the railroads have been raising the acceptance standards for cross ties. We all know that higher acceptance standards mean greater wood wastes and decreased stands of timber

suitable for ties. This affects forestry, because the main function of forestry is to supply the country with wood, and the principal means of doing this are to increase the stands of timber and decrease the wastes incident to using it.

It is not my intention to discuss the general justifiability of higher standards—it seems to me that such discussion is idle—but rather to plead for the critical examination of each item entering into those standards, to make sure that each and every one actually accomplishes the purpose for which it was adopted.

To illustrate: One western railroad is considering a specification which will reject ties made from dead lodgepole. Now it is obvious that the purpose of that specification is to exclude ties that are weak or in danger of decay or checks. But it is not obvious that ties from dead lodgepole are weaker than those from live trees. They are doubtless checked more at the time of inspection, but they may not be by the time they are in the track—they may be through checking at the time of inspection whereas the green ones are not. As for decay, if any tie is actually decayed at the time of inspection, it ought to go out on those grounds rather than because it is made from a dead tree. If it is a question of incipient decay or infection, maybe the temperatures used in treating are such that sterilization is certain. All these "ifs" are questions of fact, and most of the facts can be determined by actual study.

Even after the separate facts are determined, however, there remains the question of how they will interact on each other through a long period of time; the question of what is their net resultant as expressed in roadbed service. Foresters cannot prove in advance that dead ties will give good service, any more than railroad engineers can prove in advance that they will not. So why not start some service tests and find out? Such tests will prove whether the "dead tie rule" accomplishes its desired purpose, and if not, they will probably show what other rule will accomplish it.

The whole point is that forestry can and will carry the burden of any tie specification that is actually necessary to insure good ties, but if there is any particular specification which seems to be based on a guess, the parties at interest should make a joint effort to supplant that guess with service test facts. Since these service tests take a good many years, they should be laid out and financed before the need for them becomes critical.

C. E. Denney Advocates Wider Use of Treated Timber

C. E. Denney, vice-president and general manager of the New York, Chicago & St. Louis, spoke on Tuesday afternoon on the broader aspects of timber preservation. After tracing the increasing haul on forest products with the recession of the forests he spoke in part as follows:

"My understanding of the preservation of timber is rather broad. It includes the preservation of standing timber, careful selection and preparation in order to secure the longest possible life after application and proper handling to prevent deterioration before use. I am convinced that the preservative treatment of lumber will be extended by the railroads to include switch ties, bridge timbers and decks and car lumber."

"Beginning with properly selected lumber it follows that satisfactory treatment can be had only by using the best material that can be had at consistent prices. It is equally as unwise to use inferior treatment as to use lumber that does not meet recognized specifications. I am particularly interested in the relative merits and prices of

imported and domestic creosote and am hopeful that the entire situation may develop to the end that we may secure an ample supply of high grade material at a reasonable price. This will ultimately determine the extent to which the users of timber will subject it to treatment."

Other Subjects Discussed

Experiments reported by the Committee on Steam Treatment showed that ties gained in weight during the steaming treatment and only in the case of green ties did the subsequent vacuum reduce the moisture-content to a point equal to or less than that of the wood before steaming. This substantiates results obtained in tests of this kind made with similar equipment at the Forest Products Laboratory.

According to the report of the Committee on Preservatives, progress in the development of new materials for use as wood preservatives is rather restricted at this time. Only one class of material—low temperature tars—was mentioned, the following being an abstract of the committee's statement with regard to it.

The production of tar from the low temperature carbonization of coal has not yet reached such a magnitude as to be a real factor in our supply of potential wood preservatives, yet it is believed to be of sufficient importance to merit the continued attention of the committee. During the past year, six plants of commercial importance have operated or attempted to operate, and another plant, has just been completed. While the aggregate capacity of these plants is in the neighborhood of 5,000 tons of coal per day, operations for the year have not resulted in the production of more than 1,000,000 gallons of low temperature tar. No case is known where this tar or distillate from the tar has found its way into the wood preserving industry during the past year on any but an experimental scale.

J. D. MacLean, engineer in forest products, U. S. Forest Products Laboratory, Madison, Wis., presented a

paper giving the results of studies to determine the effect of temperature and viscosity of wood preservative oils on penetration and absorption, the following being an abstract of his conclusions.

Increasing the proportion of petroleum oil in the mixtures decreased the penetration.

The absolute viscosity, which is dependent upon the treating temperature and the kind of preservative oil used is a most important factor affecting treatment. For a given species and treatment with oil preservatives in general it appears that the relation between viscosity and average penetration can be expressed by a mathematical equation. The same is true for a given species and a particular treatment. A convenient method is thus obtained for comparing the relative influence of different viscosities on treatment.

Although the ties treated with creosote had an appreciably higher moisture content than those treated with the mixtures, in every case but one the creosote gave the best penetrations and absorptions at each of the temperatures used. An average for all treatments made with a given preservative shows that the absorption obtained with creosote was about 10 per cent greater than that obtained with the mixture of 50 per cent creosote and 50 per cent petroleum oil, and was about 25 per cent greater than that obtained with the mixture of 10 per cent creosote and 90 per cent petroleum oil. The corresponding average side penetration obtained with creosote was more than 11 per cent and 23 per cent greater than those obtained, respectively, with the two mixtures.

The Committee on Ties, which had been instructed to prepare specifications for mixture treatments presented a brief statement to the effect that such a specification cannot be written until specifications for petroleums used in such mixture treatments have been developed.

The Committee on Tie Service Records presented an extension of the table of tie renewals per mile of track on 24 railroads, covering a total of 187,231 miles of tracks. This table is reproduced in condensed form below.

As in previous years specifications in tentative or final

	AVERAGE ANNUAL RENEWALS PER MILE																		Summary										
	A. T. & S. F.	B. & O.	C. & E. I.	C. C. C. & St. L.	C. M. & St. P.	C. R. I. & P.	D. L. & W.	I. C.	K. C. S.	M. K. & T.	C. I. & L.	N. Y. C. (East)	N. Y. C. (West)	M. St. P. & S. S. M.	S. P. (Atlantic Syst.)	S. P. (Pacific Syst.)	U. P.	Miles	Number of roads	Ties	Weighted average								
1900	192	284	290	210	278	229	201	184	301	241	404	228	291	278	291	281	261	218	53,036	11	267								
1901	166	248	228	213	227	185	211	141	211	141	460	243	280	217	197	303	275	87,779	15	255									
1902	204	196	228	198	223	189	227	185	307	237	437	207	314	244	269	186	246	85,033	15	231									
1903	241	192	144	223	189	227	185	227	211	141	460	243	280	217	197	303	275	87,779	15	226	243								
1904	271	225	133	121	227	185	227	185	196	148	387	173	246	286	279	233	266	327	97,543	17	234	237							
1905	256	247	109	369	97	247	162	227	196	148	387	173	246	286	279	233	374	206	100,642	17	226	231							
1906	197	245	148	392	116	223	125	201	184	110	358	176	257	280	241	339	317	202	103,034	17	251	234							
1907	288	254	217	301	94	240	241	201	184	110	358	263	261	346	267	258	229	268	83,024	15	237								
1908	301	266	199	275	176	285	277	248	172	110	292	225	266	251	198	244	258	247	115,111	18	239	235							
1909	293	264	121	198	202	276	235	249	195	272	365	310	220	250	296	262	259	253	259	118,175	19	257	241						
1910	281	218	200	384	203	246	169	293	462	177	176	449	257	249	250	292	240	289	267	242	122,004	20	238	242					
1911	269	206	134	388	159	265	223	262	290	432	141	285	466	396	229	260	284	235	246	204	133,881	21	255	248					
1912	220	278	189	318	163	209	231	228	267	294	164	208	401	385	219	265	287	290	299	171	220	137,083	21	247	247				
1913	193	259	289	282	208	221	281	237	286	351	267	303	342	260	259	295	317	261	258	271	231	240	144,967	22	257	251			
1914	178	220	231	202	269	190	243	255	232	266	355	232	284	324	363	271	242	306	292	287	295	248	224	159,796	23	250	249		
1915	207	309	227	255	277	183	249	279	229	253	354	289	335	325	231	243	301	276	314	256	384	238	189	161,604	23	263	254		
1916	201	310	203	244	212	251	222	195	250	228	338	286	357	382	289	207	273	247	287	196	367	253	156	163,095	23	252	254		
1917	158	238	192	187	202	135	183	157	244	179	240	178	227	235	145	197	270	292	212	228	196	196	127	166,518	23	202	245		
1918	154	194	194	166	205	228	155	121	250	161	237	173	197	209	168	199	249	239	174	267	218	258	191	127	178,879	24	196	233	
1919	143	243	162	141	201	242	158	147	253	198	273	195	144	228	80	199	189	220	211	266	267	268	185	132	179,851	24	204	223	
1920	163	255	178	102	156	146	190	159	213	250	290	116	126	302	167	164	183	242	202	299	389	272	206	114	181,989	24	206	212	
1921	149	229	177	63	194	161	169	166	184	260	310	133	154	233	146	220	194	231	232	342	391	257	184	181	182,456	24	209	203	
1922	158	206	167	131	143	188	151	137	191	249	249	77	222	183	146	199	196	167	232	301	319	243	203	142	182,988	24	198	203	
1923	128	207	169	158	191	225	140	102	220	199	227	91	206	179	144	201	147	177	211	323	294	226	195	116	184,358	24	183	200	
1924	115	192	150	92	139	204	118	85	201	170	225	109	214	213	153	173	129	163	177	336	265	196	215	133	187,231	24	174	194	
% treated of $\frac{1}{2}$ 1922	88	75	92	99	87	..	92	81	52	78	51	79	90	93	99	66	79	38	68	22	80	43	100	98
all ties used $\frac{1}{2}$ 1923	..	78	..	99	80	90	98	87	35	82	58	96	56	98	97	83	89	18	74	17	65	52	100	98
1924	..	87	..	99	91	..	98	91	50	..	70	95	..	100	..	81	91	38	..	17	66	64	98	99
1925	% treated of $\frac{1}{2}$ 1924	70	60	..	98	83	60	80	82	40	..	55	70	..	63	..	52	85	52	44	9	44	57	64
ties in track 1925

Note—Horizontal lines show beginning of extensive use of treated timber.

form for adoption by the association comprises an important part of the committee reports. The specifications presented covered the creosote treatment of Douglas fir piles, the zinc-chloride treatment of Douglas fir ties and the non-pressure treatment of poles. In addition, the Committee on Preservatives submitted revisions of the standard specifications for creosote coal tar solution for ties and timbers and revisions of standard recommended practices covering the sampling of creosote oil, determination of coke residue in creosote oil, float tests for residue in oil, distillation of creosote oil and the determination of the amount of water in creosote oil. The Committee on Inspection offered a rearrangement and additions to instructions for preservative treatment of wood.

In a brief report the Committee on Posts made a plea for the establishment of test sections on the various railroads. It is the opinion of the committee that, until facts are developed through such test installations, little further progress can be made in this field. A personal paper by Reuben W. Smith, assistant professor of timber preservation, Syracuse University, was devoted to an outline of the opportunity for the employment of men having forest school training in the wood preservation industry.

Unit Heater with Fan

A UNIT heater equipped with a motor-driven fan which delivers air through a heating coil and distributes the heated air into the building space to be heated has been placed on the market by the Modine Manufacturing Company, Racine, Wis.

It consists of three major parts; namely, the condenser assembly, the manifold and frame assembly, and the motor and fan assembly. The steam condenser is of patented construction, made by a special process from selected copper and special materials. This construction provides not only for heat transfer in accordance with the proper principles of thermodynamics, but also provides for free contraction and expansion.

The unit can be quickly taken apart. The condenser can be removed simply by taking out four bolts. The motor and fan assembly can be removed by taking out three bolts. The total light weight of the unit heater is only 125 lb. which results in two advantages. All brackets, braces and structural work are eliminated for it is only necessary to suspend the heater from the steam line by means of a length of pipe and a union. The complete unit

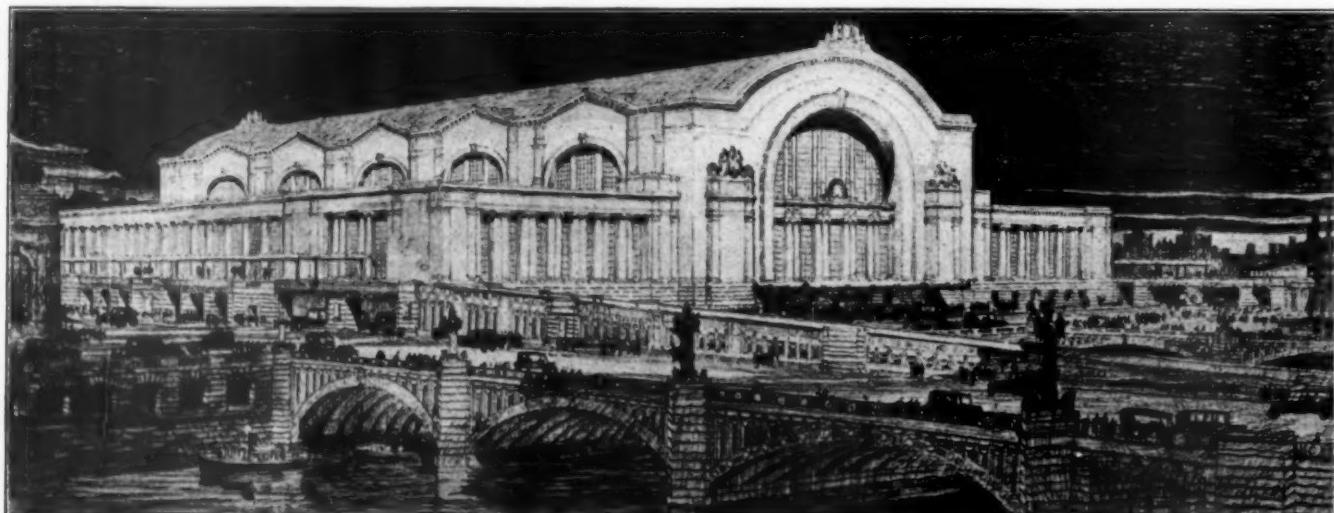
can be turned on the union connections for direction of air flow toward the machine, bench, window, door, or wherever desired to suit the immediate heat requirements. Adjustable deflectors may be added to control the downward angle of the heat discharge.

The unit is designed to provide a maximum heat trans-



Modine Unit Heater which Weighs Only 125 Pounds

fer with a minimum weight. The unit shown in the illustration is rated at 165,000 B.t.u. per hour, with 5 lb. steam pressure and a room temperature of 60 deg. F. In operation, the unit forces the heated upper air strata into circulation in the lower working levels and, therefore, maintains a uniform temperature without drafts or other objectionable conditions. Like practically all types of unit heaters, the Modine heater employs the heating principle of convection instead of direct radiation. Approximately 2,000 cu. ft. of air passes through the heater per minute, which is distributed over a wide area instead of being concentrated in the immediate vicinity of the heater.



Architect's Drawing of Proposed New P. R. R. Station at Philadelphia

General News Department

The Interstate Commerce Commission has postponed the effective date of its second train control order (January 14, 1924), in the cases of the St. Louis-San Francisco and the Central of New Jersey, to July 18.

The Brotherhood of Locomotive Engineers, which attracted wide attention in 1923 by buying a substantial interest in the Empire Trust Company, New York, is now reported to have disposed of its holdings in that institution. The reason given was a desire to concentrate its activities in its own financial enterprises.

Wage increases of from six to ten cents an hour will be asked by members of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees. Approval of this action was given by the general chairman of the brotherhood at a meeting in Cincinnati, O., on January 20. The largest increase (ten cents an hour) will be asked for the employees in the eastern region, those in the south and middle west requesting less, and those in the west asking the minimum increase of six cents an hour.

A. B. & A. Credit Union

The A. B. & A. Railroad Credit Union has been organized by officers and employees of the Atlanta, Birmingham & Atlantic for the benefit of employees of this road. It is an adjunct of the benefit association which was established by these employees about three years ago. The president of the credit union is C. E. Brower, general superintendent of transportation. The secretary is George M. Gentry, Atlanta, Ga., and the chairman of the supervisory committee is Colonel B. L. Bugg, receiver of the road.

The benefit association functions not only as an indemnity fund but also includes provisions for arbitration of disputes between the railway management and the employees, being a party to a joint reviewing board. This board consists of five members elected by employees and five appointed by the management. The membership of the benefit association at present is 1,700 or 85 per cent of all the persons employed on the road. It has a reserve fund of \$41,000. This fund will be taken over by the credit union.

"Younger Men's Night" at the Central Railway Club

The next meeting of the Central Railway Club, Buffalo, N. Y., to be held on February 11, will be "Younger Men's Night." The following papers are to be presented at this meeting: Interchange Inspection and Methods to Assist Same, by J. M. Getzen, assistant chief interchange inspector, Buffalo; Importance of Station Accounting and Its Relation to the Efficient Operation of a Railroad, by John J. Jones, chief clerk to agent, Big Four, Buffalo; Signal Maintenance, by E. F. Hood, assistant chief signal supervisor, New York Central, Buffalo; My Experience in the Mechanical Department, by Tallman Ladd, assistant enginehouse foreman, Pennsylvania, Oil City, Pa.; Divisional Car Distribution, by John Ortner, car distributor, Erie, Buffalo; Emergency First Aid Treatment by Employees, by Raymond Mitchell, clerk, trainmaster's office, Lehigh Valley, Buffalo. Entertainment will be provided by local talent.

John Fritz Medal to E. D. Adams

Edward D. Adams, of New York City, banker and capitalist, is the latest recipient of the John Fritz gold medal. The Engineering Foundation announces that the committee has awarded the medal to Mr. Adams as an "engineer, financier and scientist, whose vision, courage and industry made possible the birth, at Niagara Falls, of hydroelectric power." Mr. Adams was selected by a board of sixteen representatives of the American Societies of Civil, Mining and Metallurgical, Mechanical and Electrical

Engineers. The statement says of Mr. Adams: "Most of his long and intensely active business life was devoted to large enterprises combining engineering and finance. He had a leading part in the organization and reorganization of numerous railroads, including the West Shore, the Central of New Jersey, the Western Maryland and the Northern Pacific. He led in establishing the All-America Cables and in many other industrial undertakings.

For fifteen years he was a member of the banking firm of Winslow, Lanier & Co., having joined that firm in 1878.

Gooding Bill Reported

Senator Gooding on January 22 favorably reported to the Senate from the committee on interstate commerce, without amendment, his bill, S. 575, to withdraw the discretion now allowed the Interstate Commerce Commission by section 4 of the commerce act to authorize railroads to charge less for a longer than for a shorter distance on account of water competition. The bill does not affect authorizations in effect on December 7, 1925. A favorable report on the bill was authorized by the committee at a meeting on January 21 following the conclusion of five days of hearings which were attended generally by only a few members of the committee. Four members of the committee voted against it. No written report was made on the bill. A more comprehensive fourth section bill introduced by Senator Gooding was passed by the Senate at the last session of Congress but was not passed by the House.

The bill drafted by the National Association of Railway & Utilities Commissioners to regulate interstate commerce by motor vehicles operating as common carriers on the public highways, which was introduced in the Senate by Senator Cummins, has been introduced in the House by Representative Parker, chairman of the House committee on interstate and foreign commerce, as H. R. 8266. The proponents of the bill are trying to see if joint hearings by the Senate and the House committees on the bill cannot be arranged.

Representative Morrow, of New Mexico, has introduced a bill, H. R. 8045, to amend the transportation act so that the Interstate Commerce Commission would not have jurisdiction over the construction of a new railroad wholly within a single state.

Form 31 Wholly Abolished on the Northern Pacific

The Northern Pacific has adopted a new book of train rules, to go into effect on April 1 next, which in one important detail is different probably from the rule book of any other prominent road in America; it contains no reference to Form 31 for use in transmitting train orders.

This form, requiring the signature of the conductor or of the engineman, or both, before an order is made complete, has been practically out of use on the Northern Pacific for several years.

Rule 221c requires the universal use of clearance cards with the usual procedure to enable a conductor always to know what orders he is receiving and that the orders actually received include all that he ought to receive. When a clearance card is delivered to a train for which there are no orders, the O. K. is not required to be entered on the card. Provision is made for the issuance of clearance cards by operators in case of wire failure.

The block signal rules deal only with the automatic block system. On those few lines where the manual block system is in partial use the rules will be provided in the time table.

Rule 83 is followed by the usual provisions for bulletins, to be consulted regularly by conductors and enginemans, and for train registers; also the following:

"83-b. A train must be authorized by clearance card to use a schedule from its initial station or starting point through to its terminating station on that division.

"Operators must not issue a clearance card to a train at its initial station or starting point on any subdivision, without authority from the train dispatcher, except in case of wire failure.

Freight Operating Statistics of Large Steam Roads—Selected Items for November, 1925,

Region, road and year	Average miles of road operated	Locomotive-miles			Car-miles			Ton-miles (thousands)			Average number of locomotives on line daily			
		Principal	Train and helper	Light	Loaded (thousands)	Per cent loaded	Excluding and tender	Gross revenue	Net revenue	Servicable	Unserviceable	Per cent unserviceable	Stored	
New England Region:														
Boston & Albany.....	1925	404	238,824	265,069	34,862	5,108	69.1	257,093	66,776	111	21	15.6	...	
	1924	394	263,364	285,001	33,191	5,162	68.2	267,702	104,722	127	19	13.3	...	
Boston & Maine.....	1925	2,319	510,284	606,491	56,588	13,445	71.3	671,549	271,417	335	100	23.0	46	
	1924	2,348	513,659	596,998	64,309	13,086	70.0	669,141	274,384	336	120	26.4	37	
N. Y., New H. & Hartf.	1925	1,892	494,772	512,809	36,673	14,145	69.7	714,084	289,474	295	49	14.3	31	
	1924	1,953	463,844	493,369	31,860	12,657	70.4	640,141	268,612	314	61	16.3	34	
Great Lakes Region:														
Delaware & Hudson.....	1925	875	290,187	400,037	52,293	8,183	68.5	478,642	230,731	260	37	12.4	127	
	1924	888	335,466	476,243	44,856	9,842	66.9	617,296	313,692	248	39	13.4	77	
Del., Lack. & Western.....	1925	993	526,368	594,759	68,229	16,260	67.4	878,504	353,048	289	62	17.7	65	
	1924	993	586,307	684,791	93,795	18,337	68.2	1,044,681	472,568	299	64	17.6	16	
Erie (inc. Chic. & Erie)....	1925	2,325	977,696	1,070,280	116,624	34,809	62.2	2,079,927	839,229	610	87	12.5	167	
	1924	2,325	969,475	1,073,462	110,425	35,362	65.9	2,086,451	915,327	648	103	13.7	126	
Lehigh Valley.....	1925	1,345	558,173	610,254	91,675	17,424	65.2	998,316	428,456	411	94	18.6	104	
	1924	1,357	607,822	669,268	79,155	18,812	64.4	1,149,613	533,343	461	72	13.5	102	
Michigan Central.....	1925	1,826	547,759	561,338	17,853	18,156	64.9	977,529	366,953	293	45	13.4	100	
	1924	1,827	531,373	543,605	20,792	16,903	64.8	907,284	351,124	310	61	16.4	101	
New York Central.....	1925	6,478	2,302,226	2,605,573	176,387	81,084	60.3	5,084,137	2,190,943	1,128	348	23.6	130	
	1924	6,447	2,073,019	2,326,329	178,371	73,359	62.9	4,468,201	1,963,923	1,260	381	23.2	295	
New York, Chic. & St. L.	1925	1,669	667,196	676,562	6,716	20,409	66.2	1,065,517	436,642	218	78	26.4	26	
	1924	1,669	646,308	657,510	5,266	19,569	66.4	1,053,361	411,536	255	64	20.0	49	
Pere Marquette.....	1925	2,198	449,854	459,272	6,690	11,335	64.8	645,035	288,135	186	27	12.5	8	
	1924	2,205	381,009	390,753	8,468	9,665	66.1	554,203	261,967	195	25	11.3	26	
Pitts. & Lake Erie.....	1925	231	130,220	132,766	1,012	4,400	62.1	335,204	190,159	71	12	14.8	26	
	1924	231	117,829	120,749	1,138	4,116	62.1	317,460	185,365	68	18	21.1	15	
Wabash.....	1925	2,497	760,549	792,292	13,479	22,860	69.6	1,256,680	533,829	321	58	15.3	44	
	1924	2,460	640,629	671,865	11,063	20,061	70.9	1,078,410	456,045	292	60	17.0	29	
Central Eastern Region:														
Baltimore & Ohio.....	1925	5,196	2,113,445	2,490,012	201,394	62,796	63.0	4,049,364	1,971,576	978	220	18.4	42	
	1924	5,207	1,909,711	2,200,617	196,253	53,670	63.2	3,405,118	1,469,253	949	316	25.0	88	
Central of New Jersey.....	1925	691	251,262	278,814	38,169	6,347	62.7	391,646	184,842	235	37	13.6	55	
	1924	692	270,055	296,579	33,250	6,546	59.9	436,269	205,882	232	44	15.8	37	
Chicago & Eastern Ill.	1925	945	268,195	270,359	4,175	7,495	62.9	463,218	223,796	128	35	21.2	41	
	1924	945	239,711	241,701	3,980	6,330	61.9	383,840	180,794	124	32	20.7	39	
Cleve., Cin., Chic. & St. L.	1925	2,381	786,919	829,696	33,985	24,636	61.1	1,226,067	764,798	335	82	19.7	3	
	1924	2,386	730,077	778,722	16,728	22,870	60.6	1,499,170	708,686	362	80	18.1	36	
Elgin, Joliet & Eastern.....	1925	460	125,922	132,951	6,542	3,705	64.1	279,774	147,689	67	17	20.5	...	
	1924	460	111,493	120,778	5,515	3,406	65.4	257,891	137,222	80	18	18.2	8	
Long Island.....	1925	393	46,048	50,528	12,511	574	56.9	37,232	14,392	43	6	12.9	1	
	1924	393	44,991	46,827	8,960	603	59.1	37,393	14,727	44	14	23.6	4	
Pennsylvania System.....	1925	10,888	4,921,897	5,376,939	428,125	140,597	63.2	9,374,370	4,471,553	2,681	652	19.6	157	
	1924	10,942	4,456,593	4,822,593	359,775	124,215	64.2	8,221,260	3,955,809	2,663	849	24.2	153	
Reading.....	1925	1,132	641,961	706,786	72,799	17,031	60.4	1,180,208	601,200	379	87	18.7	117	
	1924	1,141	657,111	722,378	71,044	16,339	62.5	1,113,338	576,891	414	80	16.2	103	
Pocahontas Region:														
Chesapeake & Ohio.....	1925	2,639	1,242,324	1,317,123	39,513	38,645	55.5	3,122,953	1,680,405	488	98	16.7	...	
	1924	2,555	1,097,855	1,171,529	41,589	34,104	57.4	2,630,056	1,435,247	474	110	18.9	3	
Norfolk & Western.....	1925	2,231	922,874	1,133,672	41,495	30,544	58.7	2,547,480	1,380,765	579	55	8.7	110	
	1924	2,230	863,685	1,024,418	35,419	25,762	60.6	2,069,045	1,115,167	571	106	15.6	131	
Southern Region:														
Atlantic Coast Line.....	1925	4,900	872,808	890,969	15,475	21,326	58.9	1,224,005	452,010	391	54	12.1	12	
	1924	4,867	777,520	791,917	12,650	20,021	64.3	1,055,559	423,860	396	51	11.3	71	
Central of Georgia.....	1925	1,907	356,911	360,467	5,499	7,595	68.1	418,799	183,136	147	16	9.9	11	
	1924	1,907	317,845	319,753	4,485	7,150	75.1	369,487	170,026	135	16	10.7	11	
I. C. (inc. Y. & M. V.)....	1925	6,225	1,946,718	1,962,461	41,574	54,596	64.9	3,404,176	1,519,270	748	108	12.6	8	
	1924	6,198	1,741,236	1,764,985	36,648	51,246	65.7	3,095,538	1,369,943	771	111	12.6	30	
Louisville & Nashville.....	1925	5,027	1,878,240	1,988,906	68,397	36,581	60.8	2,464,368	1,191,074	605	94	13.4	...	
	1924	5,026	1,797,030	1,921,286	69,539	34,685	60.4	2,342,549	1,134,590	624	92	12.9	8	
Seaboard Air Line.....	1925	3,767	573,356	585,252	10,048	14,353	65.4	794,687	316,124	230	35	13.2	...	
	1924	3,547	535,518	553,752	10,354	13,372	67.8	731,617	300,438	221	38	14.7	...	
Southern Ry.	1925	6,857	1,620,821	1,671,785	37,268	37,394	64.7	2,106,257	857,049	823	119	12.6	36	
	1924	6,840	1,475,402	1,508,445	33,764	67.3	1,886,393	771,761	857	119	12.2	23		
Northwestern Region:														
Chic. & North Western.....	1925	8,462	1,531,138	1,587,552	26,520	36,403	61.6	2,171,017	845,947	736	200	21.4	85	
	1924	8,463	1,508,095	1,555,261	30,210	34,353	60.7	2,033,178	843,623	789	270	25.5	98	
Chic. Milw. & St. Paul.....	1925	11,201	1,639,243	1,762,337	92,868	47,670	65.4	2,756,998	1,209,767	897	292	18.4	94	
	1924	10,983	1,599,676	1,679,990	78,583	44,976	65.9	2,564,264	1,147,491	970	161	14.2	84	
Chic. St. P., Minn. & Om.	1925	1,726	326,360	349,221	13,929	6,418	65.3	357,115	146,255	170	39	18.9	2	
	1924	1,726	321,646	346,229	14,716	6,398</								

Compared with November, 1924, for Roads with Annual Operating Revenues above \$25,000,000.

Region, road and year	Average number of freight cars on line daily					Gross tons per train, excluding locomotive and tender	Net tons per train	Net ton- miles per car	Car miles per car-day	Net ton- miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles including locomotive and tender	Locomo- tive miles per locomo- tive day
	Per cent un- service- able	Home	Foreign	Total	Stored							
New England Region:												
Boston & Albany.....	1925	2,021	6,380	8,401	2.6	....	1,076	405	18.9	381	29.3	7,982
	1924	2,240	5,565	7,805	2.9	....	1,016	398	20.3	447	32.3	8,861
Boston & Maine.....	1925	11,945	16,635	28,580	9.1	....	1,316	532	20.2	316	22.0	3,901
	1924	12,753	17,614	30,367	10.0	....	1,303	534	21.0	301	20.5	3,895
N. Y., New H. & Hartf.	1925	17,761	24,274	42,035	16.2	137	1,443	385	20.5	230	16.1	5,100
	1924	18,724	20,456	39,180	20.9	597	1,380	579	21.5	229	15.3	4,584
Great Lakes Region:												
Delaware & Hudson.....	1925	12,152	6,144	18,296	4.3	4,297	1,649	795	28.2	420	21.7	8,788
	1924	8,771	6,322	15,093	7.0	....	1,746	887	31.9	692	32.4	11,776
Del., Lack. & Western.....	1925	14,103	10,058	24,161	3.5	108	1,669	671	21.7	487	33.3	11,857
	1924	16,037	10,140	26,177	3.7	....	1,782	806	25.8	602	34.2	15,871
Erie (Inc. Chic. & Erie)....	1925	31,944	23,131	55,075	6.5	8,037	2,127	858	24.1	508	33.8	12,030
	1924	33,984	22,303	56,287	6.1	7,538	2,152	944	25.9	542	31.8	13,124
Lehigh Valley	1925	19,391	11,308	30,699	7.3	3,050	1,789	768	24.6	465	29.0	10,615
	1924	21,446	11,554	33,000	7.0	....	1,891	877	28.4	538	29.5	13,106
Michigan Central	1925	13,313	20,172	33,485	4.6	17	1,785	670	20.2	365	27.9	6,699
	1924	12,867	15,535	28,402	5.4	395	1,707	661	20.8	412	30.6	6,408
New York Central.....	1925	54,740	79,649	134,389	4.0	5,255	2,208	952	27.0	543	33.3	11,274
	1924	62,632	69,669	132,301	4.0	14,024	2,155	947	26.8	495	29.4	10,154
New York, Chic. & St. L.	1925	9,294	12,008	21,302	5.0	613	1,658	654	21.4	683	48.2	8,722
	1924	9,043	12,196	21,239	5.4	923	1,630	637	21.0	645	46.1	8,221
Pere Marquette	1925	7,397	13,203	20,600	3.6	100	1,434	641	25.4	466	28.3	4,369
	1924	8,475	12,154	20,629	6.5	334	1,455	688	27.1	423	23.6	3,961
Pitts. & Lake Erie.....	1925	10,159	9,046	19,205	7.2	805	2,574	1,460	43.2	330	12.3	27,385
	1924	12,540	7,945	20,485	4.6	1,223	2,694	1,573	45.0	302	10.8	26,695
Wabash	1925	11,938	14,674	26,012	2.4	250	1,652	702	23.4	683	42.0	7,126
	1924	11,898	11,063	22,961	2.9	625	1,683	712	22.7	661	41.0	6,180
Central Eastern Region:												
Baltimore & Ohio.....	1925	61,907	49,698	111,605	7.2	711	1,916	933	31.4	589	29.8	12,648
	1924	67,845	40,779	108,624	12.4	2,092	1,783	864	30.7	506	26.1	10,558
Central of New Jersey.....	1925	15,008	12,668	27,676	2.9	2,798	1,559	736	29.1	223	12.2	8,918
	1924	16,792	10,965	27,757	3.7	2,409	1,615	762	31.5	247	13.1	9,917
Chicago & Eastern Ill.	1925	11,862	5,223	17,085	21.2	661	1,727	834	29.9	434	23.1	7,893
	1924	14,166	4,749	18,915	20.8	1,895	1,601	754	28.6	307	17.4	6,376
Cleve., Cin., Chic. & St. L.	1925	11,911	23,054	34,965	4.4	1,152	2,061	972	31.0	728	38.4	10,709
	1924	12,405	22,477	34,882	4.8	1,883	2,053	971	31.0	676	36.0	9,900
Elgin, Joliet & Eastern.....	1925	9,064	7,833	16,897	6.4	285	2,222	1,173	39.9	291	11.4	10,707
	1924	9,777	6,423	16,200	9.7	1,077	2,313	1,231	40.3	282	10.7	9,948
Long Island	1925	1,858	6,283	8,141	1.0	75	809	313	25.1	59	4.1	1,220
	1924	1,749	5,101	6,850	1.0	175	831	327	24.3	72	5.0	1,248
Pennsylvania System	1925	195,358	100,104	295,462	9.9	8,680	1,905	909	31.8	504	25.1	13,690
	1924	198,708	96,253	194,961	10.0	24,602	1,845	888	31.8	447	21.9	12,051
Reading	1925	17,427	19,096	36,523	2.9	607	1,838	937	35.3	549	25.7	17,708
	1924	23,204	16,678	39,882	2.0	4,177	1,694	878	35.3	482	21.8	16,859
Pocahontas Region:												
Chesapeake & Ohio.....	1925	26,118	15,349	41,467	2.8	507	2,514	1,353	43.5	1,350	55.9	21,228
	1924	26,722	14,576	41,692	3.9	761	2,396	1,307	42.1	1,147	47.4	18,725
Norfolk & Western.....	1925	26,698	11,529	38,227	1.7	....	2,769	1,496	45.2	1,203	45.3	20,627
	1924	28,232	11,038	39,270	3.2	1,556	2,396	1,291	43.3	946	36.0	16,669
Southern Region:												
Atlantic Coast Line.....	1925	20,786	25,201	45,987	3.1	....	1,402	518	21.2	325	26.1	3,075
	1924	19,047	13,435	32,482	5.3	....	1,358	545	21.2	427	31.5	2,903
Central of Georgia.....	1925	3,893	8,459	12,352	4.3	....	1,173	513	24.1	492	30.0	3,201
	1924	3,708	5,368	9,166	6.3	....	1,163	535	23.8	617	34.6	2,972
I. C. (Inc. Y. & M. V.)....	1925	37,369	28,556	65,925	3.3	....	1,749	780	27.8	767	42.5	8,136
	1924	39,454	25,605	65,059	3.4	....	1,778	787	26.7	701	39.9	7,368
Louisville & Nashville.....	1925	37,919	24,785	62,704	11.5	77	1,312	634	32.6	631	31.9	7,898
	1924	40,281	22,744	63,025	11.6	102	1,304	631	32.7	598	30.3	7,525
Seaboard Air Line.....	1925	11,272	15,387	26,659	1.6	....	1,386	551	22.0	395	27.4	2,798
	1924	9,710	10,478	20,188	4.5	....	1,366	561	22.5	496	32.4	2,824
Southern Ry.	1925	39,522	29,319	68,841	3.5	....	1,300	529	22.9	414	27.9	4,166
	1924	36,023	24,384	60,407	4.5	....	1,279	523	22.2	426	28.5	3,761
Northwestern Region:												
Chic. & North Western.....	1925	46,092	30,590	76,682	8.9	2,260	1,418	552	23.2	367	25.6	3,333
	1924	46,801	31,050	77,851	10.1	2,500	1,348	559	24.6	361	24.2	3,323
Chic., Milw. & St. Paul.....	1925	54,437	27,704	82,141	5.2	....	1,682	738	23.4	490	29.5	3,600
	1924	53,843	28,390	82,233	7.7	....	1,603	717	25.5	464	27.6	3,483
Chic., St. P., Minn. & Omv.	1925	2,855	8,917	11,772	10.2	567	1,094	448	22.8	414	27.8	2,824
	1924	3,467	10,905	14,372	9.0	1,165	1,068	458	23.0	341	21.1	2,845
Great Northern	1925	44,708	15,452	60,160	6.1	....	2,001	955	28.0	507	26.4	3,758
	1924	47,075	19,233	66,308	5.4	....	1,872	886	28.3	506	26.6	4,105
M., St. P. & S. Ste. M.	1925	18,838	7,726	26,564	4.2	532	1,292	602	24.4	449	23.8	2,731
	1924	20,751	8,667	29,418	4.3	639	1,336	646	26.3	479	26.0	3,228
Northern Pacific	1925	32,989	11,360	44,349	6.1	....	1,809	808	25.6	565	32.2	3,866
	1924	33,972	14,880	48,852	5.3	....	1,757	820	27.0	518	27.8	3,935
Oreg.-Wash. R. R. & Nav.	1925	6,576	4,196	10,772	3.6	....	1,757	720	27.0	437	32.8	192
	1924	5,522	4,428	9,950								

"A train returning to its regular route after having been detoured must not resume its schedule unless directed by train order or clearance card to do so. Such clearance card must not be issued without authority from the train dispatcher."

Meeting on Union-Management Co-operation

An open meeting on Union-Management Co-operation in the Railway Industry will be held at the Engineering Societies Building, New York, on the evening of February 5 under the auspices of the Taylor Society and the Metropolitan Section of the American Society of Mechanical Engineers. Co-operating with these two organizations are the following: the New York Railroad Club, the Management Division of the American Society of Mechanical Engineers, the New York Chapter of the Society of Industrial Engineers, and the New York Metropolitan Section of the Taylor Society.

Frederick H. Ecker, vice-president of the Metropolitan Life Insurance Company and president of the Chamber of Commerce of the State of New York, will preside. Otto S. Beyer, consulting engineer, will speak on the Technique of Co-operation. Bert M. Jewell, president of the Railway Employees Department of the American Federation of Labor, will speak on Labor's Appraisal of Principles, Methods and Results; and Sir Henry Worth Thornton, chairman and president of the Canadian National, will speak on Management's Appraisal of Principles, Methods and Results.

Canadian Commission Refuses to Rescind Pacific Rates Order

Judgment of the Dominion Railway Board on the application of the Montreal Board of Trade for rescission of the order reducing rates on Pacific bound shipments was issued in Ottawa last week. Commissioner Thomas Vien, a recent appointee to the Board, wrote a judgment holding that the Pacific order should be maintained pending the final disposition of all matters involved in the general rate investigation with a view to equalization, as ordered by the Dominion government. Chief Commissioner H. A. McKeown and Commissioner Frank Oliver concurred in that judgment. Assistant Chief Commissioner S. J. McLean and Commissioner A. C. Boyce both wrote judgments holding that the application of the Montreal Board of Trade for rescission should be granted and that the order should be suspended pending the general rate investigation. Commissioner Boyce's judgment was concurred in by Commissioner Calvin Lawrence. As there is a tie on the Board, three being for preservation of the order and three for its rescission, and as it requires a majority to upset an order already issued the Pacific rates order remains in effect. As was intimated by Eugene Lafleur, for the Montreal Board of Trade, on the last day of the hearing late in September his clients are likely to appeal from this decision to the Supreme Court of Canada.

Strong words of reproach against the original issuance of the Pacific Rate order by Chief Commissioner McKeown and Commissioner Oliver, who went to Vancouver and heard the evidence on which the order was based, are spoken by Commissioner Boyce in his judgment.

"I feel," says Commissioner Boyce, "that no fine analysis or critical examination, comparison and dissection of the provisions of the Railway Act, such as has been presented to us on the arguments of these applications, is necessary, in the light of these facts, and of this history, to reach the conclusion, as I do, that the attempts by the so-called quorum of the board to do that which the whole board declared should not be done, is not only futile and of no effect whatever, but that in proceeding, after the board had functioned by its resolution to sign the order in question, the Chief Commissioner was not acting within his powers in this attempt designed to defeat the will of the whole board."

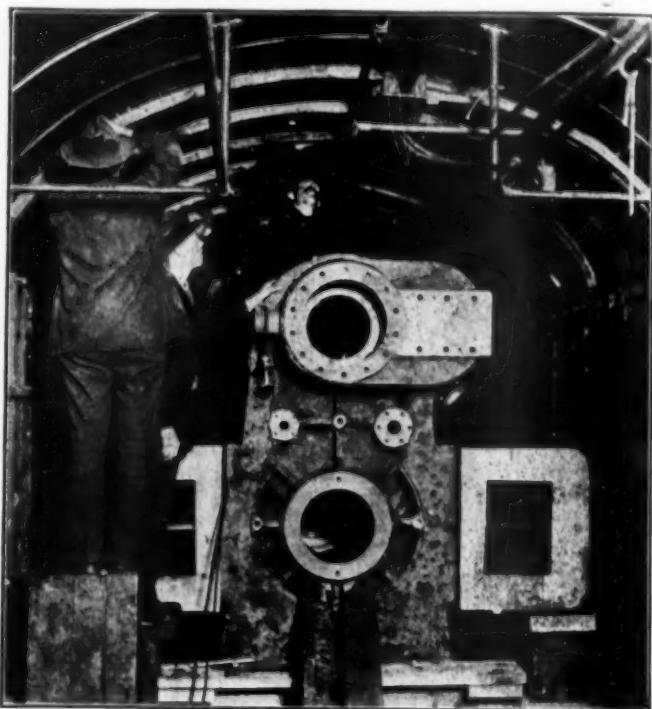
The attitude taken by Assistant Chief Commissioner S. J. McLean is that the question of westbound grain rates would be dealt with as part of the general rate investigation. He takes the position that the order should be rescinded, and that the rates provided for in the order should also be rescinded.

Pointed reference to the Pacific rates order was made in the House of Commons last week by Robert Rogers, a Winnipeg Conservative. "The government are very careful in the selection of their commissions," said Mr. Rogers. "They are very careful with respect to the individuals they appoint to these commis-

sions because they like to have a back door through which they themselves when it suits can arrange the regulation of what the commission's mind will be. Who will deny that a sample of that existed in the case of the recent individual appointed to fill a position on the Board of Railway Commissioners of Canada? Surely, Mr. Speaker, every member of this House knows that he had directions to do and give decisions concerning cases. I do not propose to deal with that now, but I will deal with it at a later period."

A 20,000-lb. Casting Shipped by Express

Extensive alterations to a baggage car were made by the Southern Pacific to permit the shipment of a 20,000-lb. marine engine cylinder by express from San Francisco, Cal., on December 17, to Barretts Point, Md., to replace a damaged part which disabled the steamship Handley. The ship had 18,000 tons of perishable freight on board and the delay resulted in a loss of \$1,000 a day. The Bethlehem Steel Company, builders of the vessel, stated that



Part of the Roof of the Baggage Car Was Removed to Permit Loading of Casting

it would take at least 28 days to cast a new cylinder in their eastern plant. By shipping the spare part by fast express more than \$20,000 was saved for the owners of the vessel. The shipment was made over the Southern Pacific on the Pacific Limited within three hours after the request for the special car was made. The casting was so large that it was necessary to remove part of the roof of a baggage car to allow the cylinder to be loaded.

Railways Subject of Warm

Argument in Canadian Parliament

Canada's political circus carries two "white elephants"—the Hudson Bay Railway and the National Transcontinental Railway. The latter has been completed for some years at a cost of over \$150,000,000, while the former is about three-fourths finished at a cost so far of about \$12,000,000. Both are "white elephants" because both are what are known as political roads built with other than purely transportation considerations. Both of the major parties in the Canadian Parliament have had their hand in the building of such roads, and in promising to build such roads. Both have in former sessions of Parliament been the subject of animated debates, and again in this present session at Ottawa, which promises to be one of the warmest in twenty years owing to the small numerical margin between the two

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major groups, the two roads have already received considerable attention.

During the recent election campaign both Premier Mackenzie King and Arthur Meighen, leader of the opposition, made promises to Western Canada in regard to the Hudson Bay Railway's completion, and those promises have now come home to the House to roost. The National Transcontinental line, whose termini for present purposes are Winnipeg, Man., and Moncton, N. B., has been projected again into the political arena by the so-called "Maritime Righters" of New Brunswick and Nova Scotia who are clamoring for the federal government to stimulate, if not compel, the carriage of a much larger quantity of Western grain over that line to Canadian Atlantic ports.

Mr. Meighen, the Conservative leader, paid his respects to the Hudson Bay controversy, in his speech in the House last week when he declared, "It occurs to me that not only have the government and the Prime Minister made up their minds for reasons very obvious, to complete the Hudson Bay railway, but the Prime Minister has resolved to get the first ride on it himself."

J. K. Flemming, a New Brunswick Conservative and formerly prominent in the affairs of his party, presented the Maritime viewpoint on the National Transcontinental question as follows:

"We spent \$165,000,000 in building that railway, a railway that was designed and constructed with the main purpose—with the single purpose I was going to say—of being the direct outlet from the prairies of the millions and millions of bushels of grain that would be produced there. Up to the present time that railway has wholly failed to carry out the purpose for which it was constructed. And worse than that, the Canadian National Railway organization at the present time have, metaphorically, built a stone wall square across that railway by charging a prohibitive freight rate to prevent grain being hauled from Winnipeg or Fort William or Armstrong to Quebec or the Atlantic ports.

"But, instead of serving the distinct purpose for which that railway was built it is today carrying no grain to Canadian Atlantic ports. The railway is open, the interest on that \$165,000,000 of cost is being paid, and must be paid. Much of the overhead expense is being incurred, and yet the road is only open to a very limited extent. Now I ask this House, why has the time not come when the government of this country, on behalf of parliament, shall ask the Canadian National executive to carry out the object that parliament had in view when this railway was promoted and when the people's money was put into it?"

Robert Forke, Progressive leader, had something to say about the capitalization of the Canadian National as it exists at this time: "The capitalization of our National railways—I have the figures here for 1924 and I think they are correct—amounts to \$2,056,181,518, a tremendous sum. It does not mean very much to me; it is beyond my comprehension to understand what two billion dollars really amounts to and I think I am in pretty much the same position as most other members of the House in that regard. In 1924 the railways owed the government \$1,142,268,435. They owed the public in bonds and stocks, in round figures, \$914,000,000, or, to be accurate, \$913,913,083.

"I saw a suggestion some time ago which I am going to give to the House for what it may be worth. The idea was to capitalize the Canadian National Railways at \$914,000,000; that is, the amount owing to the public. The amount owing to the government, \$1,142,268,000, was to be added to the national debt. The railways were to issue stock to the government for that amount, and with proper capitalization, with improving times and growing traffic, the time might come in the not far distant future when these railways would become a really valuable property, earning good profits. The government, owning stock, would thus be at least partly repaid for the amount added to the national debt."

William R. Motherwell, Minister of Agriculture in the Cabinet and representing a Saskatchewan seat, scored the Conservatives for their fights in the last four years against the building of Canadian National branch lines.

SENATOR SMITH, of South Carolina, has introduced into the Senate a bill drafted by a sub-committee of the committee on interstate commerce as a substitute for his former bill providing for 12 members for the Interstate Commerce Commission to be appointed as vacancies occur from six regional districts.

Traffic News

The Transportation Club of Louisville, Ky., will hold its annual dinner and election of officers on February 9.

Co-ordination of railway and motor bus service between Denver, Colo., and Boulder has been effected by the Colorado & Southern and the Denver & Interurban Transportation Company, a bus line in which the railway has an interest. Tickets issued by either company will be honored on either the trains or on the buses. The schedules of trains and buses have been fixed so that the combined services of the railway and the bus line provide transportation for passengers at frequent intervals throughout the day.

The Motor City Traffic Club has been organized at Detroit, Mich., by shippers and railroad representatives. Officers elected for the ensuing year are: President, C. G. Sedan, chief clerk to the general agent of the Erie; first vice-president, E. F. Stewart, traffic department, Chevrolet Motor Company; second vice-president, E. A. Konefe, chief clerk to the assistant general freight agent, Wabash; secretary, F. A. Salter, traffic department, Chevrolet Motor Company, and treasurer, B. L. Heidelberger, chief clerk to the commercial agent, Delaware, Lackawanna & Western.

The Illinois Central has made provisions for a combination Mississippi Gulf Coast-New Orleans tour in conjunction with its all-expense Mardi Gras tours which it conducts yearly from Chicago to New Orleans. The Mardi Gras tour will start February 13, leaving Chicago at 11 a. m. and arriving in New Orleans at 11:20 a. m. on February 14. Those taking the Mississippi Gulf Coast-New Orleans tour will arrive at Gulfport, Miss., at 11:30 a. m. on February 14, will leave Gulfport the next day and will arrive in New Orleans at 8 a. m. on February 16. Mardi Gras trains will leave New Orleans at 11:30 p. m. on February 17 and will arrive in Chicago on February 19.

Barge Line to Be Established on Upper Mississippi

An agreement has been made between the Upper Mississippi River Barge Line Corporation and the Inland Waterways Corporation whereby the latter will operate barges between Minneapolis, Minn., and St. Louis, Mo. Under the agreement the Upper Mississippi River Barge Line Corporation will construct a fleet of 30 steel power boats and 30 barges at a cost of \$600,000. Fifteen of the barges will be ready by April 15. The Inland Waterways Corporation will lease the boats.

Atlantic States Shippers' Advisory Board

Forty industries of the Eastern Atlantic States expect an average increase of 10 per cent in business for the first quarter this year over the corresponding period last year, according to the trade survey submitted at the second annual conference of this board, held in New York City on January 14, at which the attendance was about 400. W. J. L. Banham, general chairman, presided. Mr. Banham called attention to the fact that, for the longest period in our history, railroad transportation has been carried on with the highest state of efficiency known; this being due largely to the combination of cooperation and common sense exemplified in these forums of public opinion, where producers, shippers and carriers periodically analyze their problems.

Ample transportation to handle all business was promised by the railroads, who reported equipment and facilities to be in excellent condition. Not a single major complaint as to car service has been received during the last quarter, E. J. Cleave, New York district manager of the American Railway Association, told the conference. The coal dealers reported through the coal committee that their trade was being handled successfully by the use of substitutes; that they had no difficulty in getting all the substitutes necessary for the comfort of their trade; and that they proposed to keep on hand, during the balance of the anthracite strike, a sufficient supply of substitutes to take care of all customers' requirements. The coal committee stated that normally the Eastern territory would use in the first quarter this year 7,469,800 tons of prepared-size anthracite and 2,935,900 tons of steam-size anthrac-

cite. Dealers will take care of the bulk of this tonnage through the use of substitutes. At the present time half of the dealers are carrying less than 50 per cent of their usual stocks. The other half of the dealers are carrying the same amount of substitutes as when they were handling anthracite. Practically all dealers reported that they were getting unusually prompt delivery of coal and coal substitutes by the carriers.

Iron and steel shipments are expected to show an increased volume of 25 per cent over the first quarter of 1925. The cement committee does not expect any let-up in present building operations in Eastern territory for the next quarter. The brick committee reports that there have been substantial increases in brick stocks as compared with a year ago. There will be no great decrease in construction work in the Eastern Atlantic States during the next six months. Shipments of petroleum and petroleum products in this territory for the coming quarter will be 10 to 15 per cent in excess of the same period last year. No change is expected in the shipments of dry goods, oil cloths and linoleums, carpets, and Rayon silk. Car requirements for sugar in the New York district will be about 200 cars a day, or 10 per cent less than a year ago; in the Philadelphia district 75 cars a day, or 15 per cent less than a year ago; in the Baltimore district between 45 and 50 cars a day, or a 10 per cent increase over the first period last year.

Freight Commodity Statistics

The Interstate Commerce Commission has issued a statement showing by districts and commodities the freight tonnage transported by Class I steam railways for the quarter ended September 30, 1925. By general groups of commodities the statement shows:

THIRD QUARTER			
Number of tons originated			
Classes of commodities	Quarter ended Sept. 30, 1925	Quarter ended Sept. 30, 1924	Per cent of increase 1925 over 1924
Products of agriculture.....	28,387,945	30,593,365	*7.21
Animals and products.....	6,397,822	6,709,072	*4.64
Products of mines.....	199,414,665	175,872,450	13.39
Products of forests.....	25,303,849	24,284,475	4.20
Manufactures and miscellaneous.....	75,825,404	64,876,835	16.88
All L.C.L. freight.....	10,434,910	10,042,082	3.91
Total	345,764,595	312,378,279	10.69
Total tons carried			
Products of agriculture.....	52,608,792	57,578,369	*8.63
Animals and products.....	11,303,858	11,921,145	*5.18
Products of mines.....	147,540,153	295,701,072	17.53
Products of forests.....	50,703,263	47,963,745	5.71
Manufactures and miscellaneous.....	146,294,602	127,277,946	14.94
All l.c.l. freight.....	17,428,865	16,727,293	4.19
Total	625,879,533	557,169,570	12.33
NINE MONTHS			
Number of tons originated			
Classes of commodities	Nine months ended Sept. 30, 1925	Nine months ended Sept. 30, 1924	Per cent of increase 1925 over 1924
Products of agriculture.....	71,504,129	75,855,153	*5.74
Animals and products.....	18,940,764	19,944,538	*5.03
Products of mines.....	505,886,108	467,366,418	8.24
Products of forests.....	82,472,312	82,093,098	0.46
Manufactures and miscellaneous.....	214,018,791	192,300,029	11.29
All L.C.L. freight.....	30,192,078	30,107,638	0.28
Total	923,014,182	867,666,874	6.38
Total tons carried			
Products of agriculture.....	143,821,093	155,159,531	*7.31
Animals and products.....	33,454,679	35,111,745	*4.72
Products of mines.....	894,638,397	810,056,918	10.44
Products of forests.....	160,525,050	158,793,428	1.09
Manufactures and miscellaneous.....	413,476,052	374,366,196	10.45
All L.C.L. freight.....	50,224,030	50,366,291	*0.28
Total	1,696,139,301	1,583,854,109	7.09

*Decrease.

AMOS H. BROWN, a passenger conductor of the Fitchburg division of the Boston & Maine who has just retired on pension at the age of 77, had been in the service of that division (formerly the Fitchburg Railroad) continuously for 62 years; and, according to a letter written to him by President J. H. Hustis, he had served as conductor continuously for 60 years. His original appointment as conductor [which must have been when he was 17 years old] was in the shape of a resolution adopted by the board of directors. Mr. Brown had run between Boston, Mass., and Troy, N. Y., 191 miles, on the same train for the past 31 years.

Commission and Court News

State Commissions

Stopping at Crossings by Motor Buses

Sustaining a complaint and imposing a fine upon a passenger motor bus carrier operating under a certificate of public convenience for violation of General Order No. 24 of the Pennsylvania Public Service Commission at a grade crossing at Bigler avenue in Clearfield, the commission, Pennsylvania v. Fullington Auto Bus Co., July 14, 1925, says: "General Order No. 24 requires a full stop to be made before crossing the tracks of any steam railroad or electric interurban railway, such stops to be made not more than 75 ft. from the nearest rail of the crossing, and at points where the clearest view of approaching trains or cars can be had. A slowing down is not compliance with the order. The order covers all grade crossings, whether main line tracks, or side tracks, and no exception is permissible on the ground that the crossing is not dangerous or is protected."

Court News

Failure to Give Crossing Signals Held

Not Proximate Cause of Collision

The Circuit Court of Appeals, Eighth Circuit, holds that where an automobilist admittedly became aware of an approaching train when at least 20 feet from the crossing, in ample time to stop but for ice on the highway, the ice, and not the railroad's failure to give crossing signals, was the proximate cause of the collision.—Hickey v. M. P., 8 Fed. (2d) 128.

Certificate to Operate Over New

Parallel Highway Held Necessary

Where a bus company was operating a line of buses over a highway, between Yakima and Ellensburg, Washington, under a certificate of public convenience and necessity, and a new road, running several miles from the old one, was built between these terminals, the Washington Supreme Court held that preliminary injunction at the instance of a railroad interested was properly granted to restrain the bus company from operating over the new road without a certificate specifically authorizing operation over the new road; and a certificate authorizing such operation without a specific finding that public convenience and necessity required bus service over the new highway was held invalid.—Northern Pacific v. Yakima-Northern Stages (Wash.) 238 Pac. 905.

United States Supreme Court

Time Limit Clause of Sec. 16, Interstate

Commerce Act, Held Not Retroactive

The Supreme Court of the United States holds that paragraph 3 of section 16 of the Interstate Commerce Act, as amended by the Transportation Act, 1920, providing that actions by carriers for charges shall be begun within three years from the time the cause of action accrues is not retroactive and does not apply to any cause of action existing at the date of the passage of Transportation Act, 1920.

The St. Louis, San Francisco & Texas and the Wabash had each, prior to federal control, rendered to the War Department transportation service, payment for which was disallowed by the Auditor. Each company commenced suit therefor in the federal Court of Claims more than three years, but within six years, from the time when the cause of action accrued, and after the lapse of three years from the enactment of the Transportation Act, 1920. The government defended the suits solely on the ground that the right to sue had been lost by the lapse of time.

Judgments of the Court of Claims for the railroad companies (Wabash v. United States, 59 Ct. Cl. 322; see also Schaff, receiver v. United States, 59 Ct. Cl. 318) were affirmed.—United States v. St. Louis, San Francisco & Texas. Decided January 18, 1920. Opinion by Mr. Justice Brandeis.

Foreign Railway News

New Head for the London, Midland & Scottish

Sir Joseph Stamp, director and secretary of the Nobel Industries, Ltd., has been appointed president of the executive of the London, Midland & Scottish, the largest British railway. This is a newly created position, unique on the British railways, which was established because of the complexity of the problems arising out of amalgamating several roads to form the London, Midland & Scottish. Heretofore in British practice the highest active railway executive officer devoting all his time to these duties has been the operating head, the general manager.

German Railroads Serve as Delivery Agent for Department Stores

The German Railway Company has made arrangements with department stores in Cologne so that persons may do their shopping, and instead of being obliged to carry their purchases with them to the train, the department store has all packages forwarded to the parcel room at the railroad station, where the purchaser can check out his parcels upon presentation of an identification tag, obtainable at the department store. The charge for this service, according to the German Railroad Information Office at New York, is only 20 pfennig (5 cents), which includes an insurance limit up to 100 Marks (\$25).

Direct Freight Service from Sweden to Italy

An agreement was reached by the management of the Swedish State Railways with German, Swiss, and Italian railways, to ship 18,000 tons of rayon cellulose directly from Varmland, Sweden, through Germany and Switzerland to various destinations in northern Italy, according to Commerce Reports. Considerable reductions in German and Swiss freight rates are reported to have been granted.

The total length of the new route is over 1,200 miles, and is said to be the greatest distance covered without transshipment ever recorded in the history of Swedish railways. Trial shipments indicated that the average time required for transportation will be 10 days, with a maximum time of 15 days.

Progress in Electrification of Austrian Railways

Electrification of the Austrian Federal Railways is progressing in proportion to the release of funds from the balance of the League of Nations credits set aside for investment purposes, according to Commerce Reports.

In addition to the 56 electric locomotives ordered last year, the greater number of which are already in operation, 50 additional locomotives have been ordered, delivery to be made progressively until the end of 1927. The new type of locomotive is stronger than the former, which was adapted for an axle load of 14.5 tons; the new type is adapted to a weight of 16 tons. Heavier types, with an axle load of 18 tons, may not be introduced at present, as the roadbed of the Austrian railways is unable to support such heavy weights.

It is planned to reinforce the principal portions of the main lines at a future date, more especially the line Vienna-Salzburg, in order to permit the use of a heavier type of locomotive. Orders for the work have been distributed among the four leading electrical manufacturers.

Electrification Progress in South Africa

There has been considerable delay in completing the electrification of the Pietermaritzburg-Glenco Junction section of the Natal main line of the South African Railways, and the cost has exceeded the estimate by about £1,000,000, according to the Times (London) Trade Supplement. The electrification of this section is, however, now almost finished, and the whole length of 174 miles is expected to be under electrical operation next March.

Experience on the open section of the electrified line has shown

that there has been a great increase in train loads and a large reduction in running time compared with steam operation. Formerly a steam train with a load of 780 tons downwards occupied 14 to 15 hours on the round trip between Glenco and Ladysmith. Since electric operation was adopted two round trips are made in ten hours, the down loads hauled amounting to 3,280 tons. Electric locomotives haul freight trains from Estcourt to the Stockton tunnel at a speed of 23 miles an hour, whereas the speed maintained by steam engines did not exceed eight or nine miles an hour. The time occupied by a steam-hauled train of 780 tons in ascending the 1.25 per cent grade from Waschbank to Wessels Nek was 35 minutes. Electrical operation enables trains of 1,640 tons to be hauled over this section in 13 minutes. An aggregate traffic of 27,000 tons a day has been moved over the single Natal track by electric locomotives.

Electrification of 65 miles of track in the Cape peninsula has been begun, and electric trains should be running over the Cape suburban system in 18 months or two years. When the Cape scheme has been completed the South African Railways will have 240 track miles of electrified lines.

New Lines for Spain

The Spanish cabinet has discussed the plans of the Minister of Public Works for the immediate and rapid construction of new railway lines, according to the Times (London).

The proposed lines will be between the following towns: Madrid and Burgos; Baeza, Utiel, Teruel, Caspe, and Lerida, with an extension northward over the Pyrenees to join the French line at Saint-Girons; Cuenca and Utiel; Zamora, Orense, and Corunna; Algeciras and Cadiz; Puertollano and Cordoba; Talavera and Guadalupe.

Plans already exist for the majority of these lines, and the government intends to start construction without delay. In all it is proposed to complete 1,000 miles of new line in six years at a cost of 18,000,000 pesetas (about \$2,500,000).

British Union Rejects Wage Award

The National Union of Railwaymen, the largest railway union in Great Britain, has voted to reject a recent decision of the National Wages Board, which denied a general increase in wages for railway employees. Officers of the union, including the well-known leaders, J. H. Thomas and C. T. Cramp, counseled the acceptance of the award.

About a year ago the National Union of Railwaymen, which attempts to cover all classes of employees and actually does so except in the case of clerks, enginemen and shop employees, embarked on an "all grades" program, calling for wage increases for all employees. By the time that the case came up for consideration by the National Wages Board, the railway companies had suffered severe reductions in revenues and accordingly not only combatted the demands for increased wages but asked for substantial decreases. The decision of the board virtually left the status quo in existence. The board, however, in sustaining existing wages for present employees, provided that new men employed after February 1 might be hired at reduced rates. It is not likely, however, that the action of the union in rejecting this award will lead to a strike, since the leaders of the union have taken a conservative stand in the case and have succeeded in securing by a narrow margin the support of a majority of the union delegates in this stand.

Miscellaneous

The Department of Commerce has received the following reports from its agents in various parts of the world:

A strike of railway shop employees at Lourenco Marques, Portuguese East Africa, was declared November 12. As a result trains loaded with coal have to stop at Ressano Garcia. The men seem determined to refuse to continue under the new regulations, which include the stoppage of £4 monthly, subsistence allowance, the stoppage of medical attendance beyond that given by railway doctors at dispensaries, and no Saturday half-holiday.

The lines of the Anatolian and Bagdad railways may be bought by the Turkish government, according to rumors growing out of an interview between a representative of the stockholders of the railways and the Turkish Minister of Public Works. According to the press, the representative made new proposals to the government, which are being carefully kept secret.

Travel on the Trans-Siberian Railway is very dangerous, according to the "Peking and Tientsin Times" of October 5. According to this article, persons journeying by this route should be prepared for accidents due to the shocking state of the track and rolling stock and to the removal of bolts and spikes by bandits and counter-revolutionary soldiers.

Passengers may now reserve seats on Italian State Railway trains upon payment of 5 lire for first and 3 lire for second class reservations. Reservations on transcontinental trains are good for whatever country the train traverses. Heretofore passengers have had to take their places at least an hour before the departure of the train in order to be sure of getting reservations.

The annual report of the Siamese State Railways, for the year ended March 31, 1924, issued in October, 1925, shows the total mileage of the system to be 2,392 kilometers in operation, and 694 kilometers under construction. The total capital invested was 145,646,800 ticals, gross earnings were 12,686,612 ticals and working expenses 6,090,910 ticals, making the net receipts 6,595,702 ticals. (The par value of the tical is \$0.48½). A total of 5,050,775 passengers were carried, 975,927 tons of freight, and 211,421 heads of livestock.

A UNIQUE CHAIN LETTER recently reached the offices of the Canadian National in Montreal. It contains an appeal for safety first, and it has visited many countries. It touched Japan, the Scandinavian countries and various parts of Canada and the United States. The letter, which bore with it a request to the recipient that it be mailed to nine friends in various parts of the world, has been in circulation for some months, apparently having been started by an American officer and already having reached the countries mentioned above. The letter warns the recipient to cross crossings cautiously, practice safety first and "do everything in my power to save a life or prevent any injury to my fellow-men."

"SINCE the Canadian National Railways began to earn substantial sums annually—that is, during the past three years—we have seen a spectacle which was absent when the property was producing operating deficits year after year," said Sir Henry Thornton, president of the Canadian National, addressing the Young Men's Canadian Club of Montreal last week.

"When the system earned nothing but deficits it was regarded with tranquillity, even complacency. But once it began to make an effort to improve its service, to excite the enthusiasm of its workers and to bear fruit in the form of operating profits, people suddenly began to rush around with life preservers looking for means to save the wreck. Now that the people of Canada are faced with the staggering fact that the Canadian National Railways have made an operating profit in excess of \$30,000,000 in 1925 as compared with \$3,000,000 in 1922, this frantic rushing about to save the shipwrecked has taken on new zest.

"None of this alarm, mind you," continued Sir Henry, "became evident until the Canadian National Railways began to perform a safer service for the people of Canada. Remedy after remedy has been offered to bring about our salvation. All eventuate in the same solution, the disappearance of the Canadian National Railways by one means or another; the breaking of it into unrecognizable fragments; the handing over of it to the tender mercies of some form of private ownership; the taking of any step that will get rid of it as a publicly owned system. The solutions are all solutions of annihilation."

Turning to the question of competition, Sir Henry said:

"It is spread abroad in some sections of the land that the National Railways are becoming prosperous because they are taking away business from their competitors. That is a statement which is refuted by the published figures of the C. P. R. The figures of the Canadian Pacific for the first eleven months of 1925 show that the net earnings of that company are greater than for the same period in any year since the war. They are justly proud of that fact. I rejoice with them. Canada, too, may rejoice, in that it has evidence that both of its great railway systems are performing their service to the public and, at the same time, showing greater net earnings than for many years.

"It is often heard that the Canadian National Railways are costing the people of Canada sums of money. In the last analysis the Canadian National Railways are not costing the people of Canada a penny, because the people of Canada are enjoying the lowest freight rates in the world."

Equipment and Supplies

Locomotives

THE CARNEGIE STEEL COMPANY is inquiring for one locomotive tender.

THE AKRON, CANTON & YOUNGSTOWN is inquiring for two eight-wheel switching locomotives.

EDWARD HARTMAN has ordered one Prairie type locomotive from the Baldwin Locomotive Works.

THE SOUTHERN PACIFIC contemplates coming into the market shortly for 23 or more three-cylinder locomotives.

THE POLSON LOGGING COMPANY has ordered one Mikado type locomotive from the Baldwin Locomotive Works.

PERCATU E DE F, BRAZIL, has ordered four ten-wheel locomotives (4-6-0 type) from the Baldwin Locomotive Works.

THE LEHIGH VALLEY has ordered a 300-hp. Diesel-electric switching locomotive from the McIntosh & Seymour Corporation.

THE TENNESSEE COAL & IRON COMPANY has ordered two six-wheel switching locomotives from the Baldwin Locomotive Works.

THE NORTH RIVER COAL & WHARF Co. has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

Freight Cars

THE ANDES COPPER MINING CO. is inquiring for 25 tank cars.

THE TELA RAILROAD has ordered 50 banana cars of 20 tons' capacity from the Magor Car Corporation.

THE ANGLO-CHILEAN NITRATE COMPANY is inquiring through the car builders for 60 quarry cars of 30 tons' capacity.

HENRY WAUGH has ordered from the Pressed Steel Car Company, at its Koppel plant, 10 lift door type air dump cars of 20 cu. yd. capacity.

THE ILLINOIS CENTRAL is inquiring for 2,100 drop bottom gondola cars, 200 flat bottom gondola cars of 50 tons' capacity, 50 caboose cars and 4 air dump cars.

THE BANG CONSTRUCTION COMPANY has ordered from the Pressed Steel Car Company, at its Koppel plant, 6 lift door type air dump cars of 20 cu. yd. capacity.

THE GULF, MOBILE & NORTHERN has given an order to the Pressed Steel Car Company, at its Koppel plant, to build 12 drop door type air dump cars of 30 cu. yd. capacity.

THE MISSOURI PACIFIC has ordered 50 gondola cars of 70 tons' capacity from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of January 9.

THE SOUTHERN PACIFIC is inquiring for 1,100 box cars and 500 gondola cars. The company will also build 500 gondola cars in its own shops, as was reported in the *Railway Age* of January 9.

THE ROXANA PETROLEUM CORPORATION has ordered 400 tank cars from the American Car & Foundry Company. This company was reported in the *Railway Age* of January 23 as inquiring for 250 tank cars of 8,000 gal. capacity and 250 of 10,000 gal. capacity.

THE WABASH has ordered 5 steel underframe automobile box cars from the American Car & Foundry Company. These are in addition to the 10 ordered from the same builder, reported in the *Railway Age* of January 23.

THE SEABOARD AIR LINE, reported in the *Railway Age* of January 23 as inquiring for 2,000 freight cars, is now asking for from 1,000 to 1,500 gondola cars of 50 tons' capacity, 1,000 to 1,500 ventilated box cars of 40 tons' capacity and 1,000 to 1,500 closed box cars of 40 tons' capacity.

Passenger Cars

THE SOUTHERN PACIFIC contemplates coming into the market for 40 steel passenger cars.

THE ATCHISON, TOPEKA & SANTA FE contemplates coming into the market for 9 dining cars and 9 lounge cars.

THE NEW YORK CENTRAL has given a contract to the McIntosh & Seymour Corporation to install a Diesel oil-electric equipment in one combination passenger and baggage car for experimental purposes.

Iron and Steel

THE PERE MARQUETTE is expected to enter the market for 15,000 tons of rails.

THE BALTIMORE & OHIO has ordered 1,350 tons of bridge steel from the American Bridge Company.

THE SOUTHERN RAILWAY is inquiring for 800 tons of steel for a railway station at Greensboro, N. C.

THE DELAWARE, LACKAWANNA & WESTERN is inquiring for 1,200 tons of steel for a bridge at Owego, N. Y.

THE MOBILE & OHIO is inquiring for from 2,500 to 4,000 kegs of track spikes and from 400 to 700 kegs of track bolts.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS has ordered 530 tons of structural steel from the McClintic-Marshall Company.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 180 tons of structural steel for use at Marengo, Ia., from the American Bridge Company.

THE KANSAS, OKLAHOMA & GULF has ordered 175 tons of structural steel for a bridge at Muskogee, Okla., from the Wisconsin Bridge & Iron Co.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 1,075 tons of structural steel for a new floor system for track elevation bridges at Chicago from the McClintic-Marshall Company.

Machinery and Tools

THE BETHLEHEM STEEL COMPANY has ordered an axle lathe from the Niles-Bement-Pond Company.

THE MISSOURI PACIFIC has ordered one 15-ton gantry crane from the Shaw Electric Crane Company.

THE INGERSOLL-RAND COMPANY has ordered a 27-in. by 14-ft. lathe from the Niles-Bement-Pond Company.

THE PULLMAN CAR & MANUFACTURING CORPORATION has ordered a 42-in. by 42-in. by 14-ft. planer from the Niles-Bement-Pond Company.

THE NEW YORK CENTRAL has ordered three axle lathes from the Niles-Bement-Pond Company and a 24-in. shaper from Joseph T. Ryerson & Son, Inc.

Miscellaneous

THE NEW YORK CENTRAL has given a contract to the New York Shipbuilding Corporation, Camden, N. J., for the construction of four 16-car floats. These floats are to be of the platform

type with a length of 366 ft., a breadth of 40 ft., and a draft of 12 ft. The company also has received bids and has under consideration the construction of ten covered steel barges for which final bids were received on January 5.

Signaling

THE LEHIGH VALLEY has ordered from the General Railway Signal Company, material for an electric interlocking, 21 working levers, for Athens, Pa.

THE MOBILE & OHIO has contracted with the General Railway Signal Company for the installation of an electric interlocking at Montgomery, Ala., 29 working levers.

THE FLORIDA EAST COAST has ordered from the General Railway Signal Company an electric interlocking, 14 working levers, for St. Augustine, Fla. Color light signals will be used.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS has ordered from the General Railway Signal Company material for the installation of an automatic block signal system between Terre Haute, Ind., and Pana, Ill., 95 miles. The contract includes 46 base-of-mast signals, model 2A; five top-of-mast signals, model 2A, and 22 ground signals, two arm, the lower arm to be mechanically operated.

American Railway Association
All the Year - Every Year Safety Program
for Study in February 1926

Struck or Run Over by Engines or Cars

THE CAUSE
INATTENTION

THE REMEDY
LOOK! & LIVE!

On All Railroads in 1924

	KILLED	INJURED
Employees on duty	388	707
Other persons	1945	1321

Only YOU can save yourself from such a fate.

Educational Bulletin of the American Railway Association
for February

	Number freight cars on line	FREIGHT CAR REPAIR SITUATION			Per cent of cars awaiting repairs	Month	Cars repaired		
		Heavy	Light	Total			Heavy	Light	Total
1925									
January 1	2,293,487	143,962	47,017	190,979	8.3	December, 1924	66,615	1,288,635	1,355,250
February 1	2,305,520	139,056	47,483	186,539	8.1	January, 1925	69,084	1,358,308	1,427,392
March 1	2,313,092	141,192	43,855	185,047	8.0	February	66,283	1,313,088	1,379,371
April 1	2,315,732	143,329	43,088	186,417	8.1	March	71,072	1,348,078	1,419,150
May 1	2,316,561	144,047	45,467	189,514	8.2	April	69,631	1,290,943	1,360,574
June 1	2,320,261	146,998	48,988	195,986	8.4	May	65,651	1,276,826	1,342,477
July 1	2,326,734	150,530	47,938	198,468	8.5	June	71,789	1,296,558	1,368,347
August 1	2,335,223	153,674	43,607	197,281	8.4	July	70,087	1,330,595	1,401,682
September 1	2,333,849	149,705	47,473	197,178	8.4	August	71,307	1,369,878	1,441,185
October 1	2,335,475	139,551	40,020	179,571	7.7	September	72,227	1,335,501	1,407,728
November 1	2,325,086	127,680	37,801	165,481	7.1	October	75,056	1,352,123	1,427,179
December 1	2,307,665	124,178	41,640	165,818	7.2	November	66,023	1,291,809	1,357,832
January 1, 1926	2,304,803	118,970	38,435	157,405	6.8	December	67,886	1,296,001	1,363,887

Data from Car Service Division Reports.

Supply Trade News

Frederick H. Chapin, vice-president in charge of operation of the **Bourne-Fuller Company**, with headquarters at Cleveland, Ohio, has resigned.

The Benjamin Electric Manufacturing Company, Chicago, will construct a one-story 90 ft. by 140 ft. factory at Desplaines, Ill.

The Universal Portland Cement Company has purchased a 35-acre site near Cleveland, O., on which it plans the construction of a plant.

R. Charles Brower, assistant general manager of the **Timken Roller Bearing Company**, Canton, Ohio, has been promoted to the position of assistant to **H. J. Porter**, vice-president in charge of sales.

R. M. Blackburn, formerly general storekeeper of the **Chicago & North Western**, has been appointed railroad sales representative of the **Buda Company**, Harvey, Ill., with headquarters in Chicago.

L. G. Pritz, whose promotion to vice-president and general manager of the **United Alloy Steel Corporation**, Canton, Ohio, was announced in the *Railway Age* of January 16, was born in Dayton, Ohio, on February 8, 1887, and was educated at Ohio State University. In 1909 he entered the employ of the Illinois Steel Company and after holding various positions resigned in March, 1917, to take charge of the steel plant of the Timken Roller Bearing Company, Canton, Ohio. In August, 1922, he became vice-president in charge of operations of the Sizer Steel Corporation of Buffalo, N. Y. which position he held until October, 1924, when he became associated with the United Alloy Steel Corporation as vice-president in charge of all operations, which position he has held until his recent promotion.

G. A. Secor, general storekeeper of the **Chicago & Alton**, with headquarters at Bloomington, Ill., has resigned to become sales representative of the **Buda Company**, Harvey, Ill., with headquarters in Chicago.

M. J. Miller has been appointed sales engineer in charge of the Detroit district of the **Diamond Power Specialty Corporation**, Detroit, Mich. Mr. Miller was in charge of the Philadelphia district for several years.

A. M. Branum, formerly sales engineer of concrete reinforcement and specialties of Joseph T. Ryerson & Co., Chicago, has been appointed representative of the **Jones & Laughlin Steel Corporation**, with headquarters in Chicago, Illinois.

Fred A. Fenton, who formerly represented Joseph T. Ryerson & Son, Inc., New York, covering railroads and industrials on machine tools, has opened an office at 30 Church street, room 423, New York City, as a representative of manufacturers.

Plans for the reorganization of the **North American Car Company**, Chicago, as the **North American Car Company** of

Illinois were approved at a stockholders' meeting on January 22. The new organization will have a capitalization of 125,000 shares of common stock of which 83,500 will be issued. The purpose of the financing is to provide the company with additional capital to meet the needs of an expanding business. The plan calls for the exchange of the class A stock of the present corporation for the common stock of the new concern on a share-for-share basis, and of the present common stock on a two-for-one basis.

The Coach & Car Equipment Corporation, Railway Exchange building, Chicago, has been organized to handle seating material and seating equipment for steam and electric railways and motor coaches by **Edward Baker**, formerly manager of railroad sales of the Heywood - Wakefield Company, with headquarters at Chicago. Mr. Baker graduated from the University of Illinois in 1908 and for the following three years was a car apprentice for the Pullman Company. For the following two years he was a special boiler maker apprentice on the Illinois Central and was later promoted to inspector, with headquarters at Chicago. In 1915 he was appointed general foreman on the Minnesota division of the Chicago, Rock Island & Pacific, and in 1916 was appointed master mechanic of the Missouri-Kansas-Texas, with headquarters at Dallas, Tex. In 1919 he entered the employ of the Galena Signal Oil Company as a mechanical expert and salesman and a year later was appointed western sales manager of the Rome Iron Works. In 1920 he became manager of railroad sales of the Heywood-Wakefield Company, with headquarters at Chicago.



E. Baker

George H. Charls, who has been elected president of the **United Alloy Steel Corporation**, Canton, Ohio, was born in 1878 and was educated at the University of Cincinnati. He

entered business as a storekeeper for the Central Union Telephone Company and in 1901 entered the employ of the American Rolling Mill Company at Middleton, Ohio, in whose employ he remained until 1918. For two years he was an apprentice in the sheet mill and galvanizing department and for the following 15 years held the positions of shipping clerk, order clerk, invoice clerk, assistant cashier, traffic manager, salesman, assistant sales manager, assistant secretary and sales manager and vice-president and management committee. In 1918 he resigned from the latter position to become vice-president and general manager of the Stark Rolling Mill Company and the Berger Manufacturing Company, which position he held until 1922, when the Stark Rolling Mill Company and the Berger Manufacturing Company were merged into the United Alloy Steel Corporation. At this time he was appointed vice-president and gen-



G. H. Charls

eral manager of the United Alloy Steel Corporation, which position he has held until his recent promotion.

At the next annual meeting of the Pressed Steel Car Company, Jersey City, N. J., on February 17, action will be taken on a proposed merger into the company of the Western Steel Car & Foundry Co., one of its subsidiary companies, with plant at Chicago.

The Erie Foundry Company, Erie, Pa., has opened the following district sales offices: At 1120 Myrtle avenue, Plainfield, N. J., in charge of H. Terhune; 549 Washington boulevard, Chicago, in charge of L. F. Carlton and 408 Donovan building, Detroit, Mich., in charge of R. B. McDonald.

The J. G. Brill Company, Philadelphia, Pa., has granted an extension of time to its stockholders until 3 p.m., February 15, 1926, within which deposits of stock of the J. G. Brill Company may be made with and will be accepted by the Real Estate Title Insurance & Trust Co., Philadelphia, Pa., under the plan and proposal submitted by President Samuel M. Curwin, as was reported in the *Railway Age* of January 16.

At the annual stockholders' meeting, of the Dayton Manufacturing Company, Dayton, Ohio, January 25, the following changes were made in the personnel: Nelson Emmons, Jr., president and general manager; Joseph Leidenger, vice-president; H. D. Hendrick, vice-president and secretary and E. L. Eidemiller, treasurer. The above changes were made necessary on account of the death on December 29 of President John Kirby, Jr.

William K. Vanderpoel, general superintendent of distribution of the electric department of the Public Service Electric & Gas Company, New Jersey, has resigned to become



W. K. Vanderpoel

vice-president and executive engineer of the Okonite Company and the Okonite-Callender Cable Company, Inc., makers of wire and cable for electric purposes, with factories at Paterson and Passaic, N. J., and general offices in New York City. Mr. Vanderpoel went to the Public Service Company in 1907 as superintendent of distribution for the Newark district, and on January 1, 1916, he was made general superintendent of distribution. During the ten years that he was in charge there was a large expansion in business and equipment; more than 500 miles of transmission lines were added and over 13,000 additional miles of wire strung and the work of changing the distribution lines from two to three phase was carried forward until it is now nearing completion. Mr. Vanderpoel has for a long time been identified with the American Institute of Electrical Engineers and the National Electric Light Association. In the latter organization he is at present vice-chairman of the National Technical committee, was chairman of the Overhead Systems committee in 1920 and 1921 and has at various times served as chairman or member of other important committees. His work in connection with wood preservative methods, as embodied in the reports for 1910 and 1911 of the committee on the Preservative Treatment of Poles and Cross Arms, of which he was chairman, constituted a valuable contribution to the industry. Mr. Vanderpoel is a manager of the American Institute of Electrical Engineers, and has served or is serving on a number of the committees of that association. Prior to entering the Public Service organization, he was engaged in mining in South America. He has had telephone engineering experience in this country and Cuba and for a time served as assistant purchasing agent of the Florida East Coast.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—The budget for this year includes the construction of a double track lift bridge over Old River at Orwood, Cal., to cost \$400,000, and a power plant at Bakersfield, Cal., to cost \$100,000.

ATLANTIC COAST LINE.—This company has applied to the Interstate Commerce Commission for authority for the construction of an extension from Thonotosassa to Dade City, Fla., 21 miles.

CENTRAL OF NEW JERSEY.—A contract has been awarded to James A. Hart for grading preparatory to the construction of a new engine terminal at Bethlehem, Pa.; estimated cost, \$128,600.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—The bridge at the intersection of the railway with the national highway near Putnamville, Ind., will be reconstructed at a cost of \$36,000.

MISSOURI PACIFIC.—Plans for the construction of a second track from Washington, Mo., to Berger, 19 miles, and from Algoa, Mo., to Jefferson City, 4 miles, which were reported in the *Railway Age* of January 16, include the rearrangement and enlargement of the freight yards at Jefferson City, the elimination of numerous sharp curves and the elimination of a 600-ft. tunnel by the construction of a detour line, approximately 6,000 ft. in length. This project will cost approximately \$3,225,000. A second track will also be constructed from Alexander Junction, Ark., to Bauxite, a distance of 5 miles, providing a second track for the entire distance from Little Rock, Ark., to Benton. Plans are being prepared for the construction of a freight house at Coffeyville, Kan., to cost approximately \$125,000, and a freight house and track changes at Omaha, Neb., to cost approximately \$135,000. Plans for the construction of a joint union passenger station at Texarkana, Ark., in which the Texas & Pacific, the Kansas City Southern and the St. Louis-Southwestern will also participate are being considered. Tentative estimate of the cost of the entire structure including rearrangement of the existing track facilities and general layout is \$1,300,000. In connection with this improvement, the Missouri Pacific jointly with the Texas & Pacific contemplates the rearrangement and enlargement of joint track facilities at Texarkana. Mechanical coaling stations are planned for construction this year as follows: 350-ton at Washington, Mo., to cost \$50,000, and 250-ton at Centerview, Mo., and Archie, each to cost \$40,000. Construction of a water softening plant at Horace, Kan., at a cost of \$65,000 is contemplated.

PENNSYLVANIA.—A contract has been awarded to J. T. Gray & Son, Portage, Pa., for the construction of a new brick passenger station at Portage to cost approximately \$30,000. A contract for the erection of the superstructure for an overhead bridge at Chapel street, Louisville, O., has been awarded to the Seaboard Construction Company, Philadelphia. Lyman S. Peck, Inc., Philadelphia, has received a contract for the extension of the erecting and machine shops at Olean, N. Y., at a cost of approximately \$100,000.

ST. LOUIS, TROY & EASTERN.—This company has applied to the Interstate Commerce Commission for authority for the construction of a line of .53 miles at Venice, Ill.

SOUTHERN PACIFIC OF MEXICO.—Recent floods in Mexico which caused damage to the line of \$250,000 are not expected to delay the opening of the line through to Mexico City next June, repairs to flood damage and new construction being carried out simultaneously.

UNION PACIFIC.—The Interstate Commerce Commission has authorized this company to construct an extension from Cottier, Wyo., 4 miles northwest to serve a beet sugar development; estimated cost, \$182,028.

THE FORT WORTH & DENVER CITY has moved its general offices to the Fort Worth Club building, 307 West Sixth street, Fort Worth, Tex.

Railway Financial News

ALAMEDA BELT LINE.—*Acquisition and Construction.*—The Interstate Commerce Commission has issued a certificate authorizing this company to acquire a line built by the city of Alameda, Calif., in 1918, and to extend it to proposed car ferry slip, and also to build a further extension to the shore line of San Francisco Bay. Authority has also been granted for the company to issue \$500,000 of common stock, one-half of which is to be acquired by the Atchison, Topeka & Santa Fe and the other half by the Western Pacific, the two latter companies having also been authorized to extend their operations by means of car floats, lighters, barges and ferries to be operated on the estuary of San Antonio and San Francisco Bay, Calif. The purpose of the measures authorized is to develop an industrial area in Alameda, which will be served by the Santa Fe and the Western Pacific.

ASHLAND.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to take over and operate the line of the Alabama & Northern.

ATLANTIC COAST LINE—Equipment Trust.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$5,100,000 of 5 per cent equipment trust certificates, to be sold to J. P. Morgan & Co., at 96.

BALTIMORE & OHIO.—*Bonds Sold.*—Kuhn Loeb & Co., Speyer & Co., and the National City Company have sold \$30,000,000 refunding general mortgage five per cent bonds, series D, due March 1, 2,000. The bonds were offered at 95½ to yield 5.24 per cent to maturity. The purpose of the sale of the bonds is to provide funds necessary to anticipate payment of the company's indebtedness of \$11,900,000, bearing six per cent interest, \$2,900,000 of which was incurred to the United States government and \$9,000,000 to the Railroad Administration which latter obligation has heretofore been sold by the Railroad Administration and is now publicly held and to reimburse the treasury in part for additions and betterments heretofore made and for other corporate purposes.

BEVIER & SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of portions of this company's line in and near Ardmore, Mo., totaling 2,554 miles. The carrier is controlled by the Central Coal & Coke Company, and the lines proposed to be abandoned serve coal operations since discontinued.

BEAVER, MEADE & ENGLEWOOD.—*Final Value.*—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$75,000 as of June 30, 1918.

CENTRAL OF NEW JERSEY.—*Lease of Lehigh & New England Rumored.*—For the past few days a rumor has been current that the Lehigh & New England may be leased by the Central of New Jersey. The L. & N. E. is owned by the Lehigh Coal & Navigation Company. The railway is 296 miles long and extends from the anthracite coal regions to Campbell Hall, N. Y., where it connects with the Central New England's Poughkeepsie Bridge route.

DELAWARE & HUDSON.—*Defers Dividend Action.*—At the regular January meeting of the board of managers on Wednesday, at which the quarterly dividend of 2½ per cent, payable in March, is usually declared, action was delayed, it being explained that it was desired to wait for the final figures for 1925. Intimation was given that as soon as the figures were available a special meeting would be called to take action on the dividend.

DENVER & SALT LAKE.—*Six Months Guaranty.*—The Interstate Commerce Commission has issued a certificate fixing the amount of this company's guaranty for the six months following the termination of federal control at \$384,905. As previous payments exceed this sum the company is held to owe the government \$40,094.

ENSLEY SOUTHERN.—*Sale.*—It is reported that the Southern Railway has offered to sell this property for \$500,000 to Birmingham interests or to the Inland Waterways Corporation. The property is 33 miles long but owns no equipment. It has been in receivership since July 1, 1924. It serves as a connection between Birmingham, Ala., and the Warrior river barge line.

ERIE.—*Stockholders Protest.*—Frank Bailey, chairman of the board of the Prudence Company, Brooklyn, N. Y., as chairman of a committee representing certain holders of Erie first and second preferred, has addressed to directors of the Erie a letter protesting against the terms to shareholders in the proposed leasing of the Erie to the Nickel Plate. The committee challenges the legality of the terms as failing to take account of priority privileges to preferred shareholders.

GREAT NORTHERN.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of \$5,000,000 of 5 per cent bonds to be sold at 95½.

GREAT NORTHERN.—*Tabloid Annual Report.*—The Great Northern, following its usual custom, will mail with the dividend checks on February 1, copies of a tabloid annual report of 1925 operations, thus making the information available to stockholders three or four months in advance of the regular annual report. The tabloid report shows net income after charges for 1925 of \$21,300,000, equivalent to \$8.56 per share of the company's stock as compared with \$17,941,600, equivalent to \$7.18 a share in 1924. The report gives the following details:

The income statistics for 1925 and 1924 are as follows, 1925 being approximate:

	1925	1924
Revenue from freight transportation.....	\$90,100,000	\$86,144,671
Revenue from passenger transportation.....	13,900,000	13,683,383
Revenue from mail, express and other transportation.....	10,900,000	10,415,050
Total railway operating revenues.....	<u>\$114,900,000</u>	<u>\$110,243,104</u>
Railway operating expenses.....	75,900,000	75,212,058
Net revenue from railway operations.....	<u>\$39,000,000</u>	<u>\$35,031,046</u>
Taxes.....	9,800,000	10,257,741
Equipment and joint facility rents.....	Dr. 1,000,000	Dr. 572,018
Net railway operating income.....	<u>\$28,200,000</u>	<u>\$24,201,287</u>
Other income	*11,400,000	**11,653,877
Total income	<u>\$39,600,000</u>	<u>\$35,855,164</u>
Income deductions:		
Interest	†17,800,000	†17,370,054
Other	500,000	543,510
Balance for dividends and other corporate purposes	<u>\$21,300,000</u>	<u>\$17,941,600</u>

* Includes \$8,302,560 dividend from C. B. & Q. stock.

† Includes \$8,050,000 interest on bonds issued for purchase of C. B. & Q. stock.

The balance available for dividends and other corporate purposes equals \$8.56 per share of stock outstanding. This should not be understood to mean a return of 8.56 per cent on the investment in the property. Owing to the fact that the Great Northern is undercapitalized, the net railway operating income for 1925 is only 5.12 per cent of the property investment. For the five years since federal control the return has been as follows:

1925.....	5.12 per cent
1924.....	4.48 "
1923.....	4.71 "
1922.....	3.38 "
1921.....	2.55 "

This shows an improvement which is encouraging. It is true nevertheless that the aggregate earnings for these five years are \$45,300,000 short of the 5½ per cent fixed by the Interstate Commerce Commission as a fair return. To say that the present situation is satisfactory because earnings are better than they were during a ruinous period would be very erroneous. If earnings were sufficient for a fair return on its property value, Great Northern stock would sell above par, and that would be well both for the public and the railroad because it would permit some of the financial requirements to be met by the issue and sale of additional stock. A stable financial structure is necessary in order that a railroad may enjoy the best credit, and the better its credit the lower its cost of doing business. Stability must be secured by maintaining a proper ratio of stock and bonds. But financing by the sale of stock is out of the question now on most roads and on all of them in the Northwest, as it has been for several years. It cannot be done until stock can be issued and sold at par.

Net railway operating income of \$28,200,000 in 1925 compares with \$28,666,681 for the so-called Test Period (three years ended June 30, 1917). It is ten years since the middle of the test period. During that ten years property was added costing \$97,800,000, upon which it is apparent there has been no return whatever, yet the interest on this additional investment amounts to more than \$5,000,000 per year.

Increase in revenue per net ton-mile for 1925 compared with 1915 was

30 per cent for Great Northern,
38 per cent for Northwest Region and
53 per cent for United States.

Prompt and adequate transportation was rendered by your Company throughout the year, and at all times a much larger traffic could have been handled without congestion or car shortage. As a transportation machine the property has never had so great capacity or been able to give such excellent service. Passenger revenue increased \$216,617 notwithstanding continued loss of local travel and a substantial decrease in passenger train miles. The increase in through passenger business doubtless was due in part to the new specially built and specially furnished Pullman equipment of the Oriental Limited and the new standard Pullman cars on other trains. The extended use of oil for locomotive fuel (two-thirds of the distance between Saint Paul and the Pacific) and the smooth handling of trains by new mountain-type locomotives has added cleanliness and comfort to the overland journey. One of these locomotives made a run of 3,576 miles in 99 hours 45 minutes, handling 18 cars of silk from Seattle to Saint Paul, and returning

ing handling the fast mail train, establishing a world's record long locomotive run.

The following shows operating ratios for the past five years and for the so-called test period:

1925.....	66 per cent
1924.....	68 "
1923.....	72 "
1922.....	77 "
1921.....	79 "
1914-17 (Test Period).....	57 "

Operating costs have been reduced by improved motive power, equipment and terminals, additional main tracks, sidings, and signals, and by co-operation of willing employees with management, and of both with shippers, all of which resulted in larger trains and expedited movement. Measured in ton miles of transportation per employee, the results have been as follows:

Year	Net Ton Miles
1925	295,000
1924	274,000
1923	269,000
1922	250,000
1921	207,000
1914-17 (Test Period).....	232,000

Production in the Sunburst oil field of Montana is increasing steadily, and Montana oil now is an important source of traffic as well as an important source of locomotive fuel.

One-fourth of last year's grain crop remains to be hauled to market. The improved credit of the farmer, resulting from fair crops and prices, promises some increase of freight to be moved into the territory. Iron ore moved from the Mesabi Range during 1925 amounted to 13,158,056 tons. Prospects are for an equally large and perhaps a larger movement in 1926.

INTERNATIONAL-GREAT NORTHERN.—Equipment Trusts.—The Interstate Commerce Commission has authorized the issuance of \$1,920,000 equipment trust certificates, series A, paying 4½ per cent interest and maturing in equal annual installments to December 1, 1940. These trusts have been sold to Kuhn, Loeb & Co., at 96.25, giving an annual cost of 5½ per cent to the carrier. They were offered to the public in December, as reported in the *Railway Age* of December 19. The equipment includes 1,000 freight cars, 5 locomotives and 10 passenger train cars, of a total approximate cost of \$2,557,797.

INTERSTATE.—Final Value.—The Interstate Commerce Commission has issued a report finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$1,802,200 as of 1916.

LACKAWANNA & WYOMING VALLEY.—Application of Section 15a.—The Interstate Commerce Commission has determined that the provisions of section 15a of the Interstate Commerce Act are applicable to the Lackawanna & Wyoming Valley, which operates an electric line between Scranton, Pa., and Wilkes-Barre, 20 miles, with a branch from Scranton to Dunmore, 3½ miles. For the past several years the railroad's freight revenues have constituted about 15 per cent of its total operating revenues. The carrier has track connections with the Lackawanna, the Lehigh Valley and the Erie, and joins with them in through routes and joint rates, and interchanges traffic with them. In its decision, among other things, the commission said:

"Paragraph (1) of section 15a defines the carriers to which the section is applicable, excluding certain classes, among which are 'interurban electric railways, unless operated as a part of a general steam railroad system of transportation, or engaged in the general transportation of freight.' It clearly appears from the record that the carrier is not operated as part of a general steam railroad system of transportation, and the only remaining issue is whether or not it is engaged in the general transportation of freight, within the meaning of the section. . . . We are unable to find warrant for a holding that a carrier which not only makes provision by its facilities and through the publication of tariffs for the handling of practically all classes of freight, but does, in fact, carry a large variety of commodities in substantial amounts, is not engaged in the general transportation of freight within the meaning of section 15a."

Commissioner Meyer had a dissenting opinion in which Commissioners Aitchison, Esch, Lewis and Woodlock joined, in which he said:

"In determining the intent of Congress as to the application of section 15a to electric lines, consideration must be given to the section as a whole, and to the effects that would follow the inclusion or exclusion of carriers of any particular class. In the development of the plan for rate-making and for the recapture of a portion of the earnings of the carriers which under the general rate adjustment received a return of more than 6 per cent, Congress evidently had in mind the steam railroad system of the country, then very largely under federal control. The collective treatment of the carriers, including the sharing of benefits as well as burdens, made necessary the limitation of the application of the law to such classes of carriers as were in position to take part in the general scheme. It appears that only about 7 per cent of this carrier's revenue for the year 1922 was derived from rates subject to our jurisdiction and the record indicates that the proportion is now even less. This situation is characteristic of interurban electric freight-carrying lines. The report of the majority will place us in the anomalous position of fixing the fair return of a considerable group of carriers whose traffic is very largely beyond our jurisdiction."

"It may be that when this question shall have been presented, as a matter of law, the Supreme Court will sustain the majority view. However, until this happens we should give the phrase 'engaged in the general transportation

of freight' a practical and workable construction, consistent with the orderly progress of our work. I find nothing in the letter of the law, nor in its spirit, which compels us to adopt the construction which the majority report sustains."

L'ANGUILLE RIVER.—Final Value.—The Interstate Commerce Commission has found the final value for rate-making purposes as of 1918 to be \$12,500.

LOUISIANA RAILWAY & NAVIGATION COMPANY.—Final Value.—The Interstate Commerce Commission has issued a final valuation report placing the final value for rate-making purposes of the property owned and used for common-carrier purposes as of 1917 at \$10,796,479.

MANISTEE & REPTON.—Final Value.—The Interstate Commerce Commission has found the final value for rate-making purposes as of 1917 to be \$75,000.

MISSOURI PACIFIC.—Equipment Trusts.—The Interstate Commerce Commission has approved the issuance of \$4,830,000 equipment trust certificates, series E, paying 4½ per cent interest and maturing in equal annual installments to December 1, 1940. The certificates have been sold to Kuhn, Loeb & Co. at a price of 96.25, making an annual cost to the carrier of 5½ per cent. They were offered to the public in December, as reported in the *Railway Age* of December 12. The equipment includes 2,000 freight cars, 25 locomotives, 22 passenger train cars, 8 gasoline rail motor cars, 2 derricks, 1 ditcher, and 1 spreader, having a total approximate cost of \$6,453,533.

NEW YORK, NEW HAVEN & HARTFORD.—1925 Earnings.—The New Haven in 1925 carried the largest business, measured in ton-miles, in its history. With \$4,053,000 additional gross income, its net after charges was \$7,418,252 as compared with \$2,998,650 in 1924. The 1925 net was equivalent to \$4.72 a share on the company's \$157,117,900 capital stock, and the 1924 earnings to \$1.90 a share.

PITTSBURGH & WEST VIRGINIA.—Control of West Side Belt.—The Interstate Commerce Commission has granted authority for the Pittsburgh & West Virginia to continue control of the West Side Belt for a period of 10 years from January 1, 1926, through an agreement providing for the operation of both companies by the first named company. In January, 1922, the commission approved the agreement for the acquisition of the West Side Belt through an agreement providing for the operation of properties in joint interest until December 31, 1925, which agreement is now authorized to be extended for an additional term.

PITTSBURGH & WEST VIRGINIA.—Stockholders Approve Capitalization Change.—Stockholders on January 11 approved the proposals made last November (see *Railway Age* of November 7, 1925, page 878) for the exchange for each share of present common stock for one-half share of 6 per cent cumulative preferred stock of \$100 par value and one share of common stock of \$50 par value. The present common shares have a par value of \$100. There is now outstanding \$30,235,100 common stock, and the company has in its treasury \$9,100,000 preferred stock retired in December, 1924, on the segregation of the company's coal properties. Stockholders authorized the issuance of 61,000 additional shares of preferred stock, making the total authorized issue \$15,200,000, an increase in the common stock from the 305,000 shares at present authorized (of which 302,351 are outstanding) to 488,000, and change in the par value from \$100 to \$50. Application for Interstate Commerce Commission approval of the change in capital structure is pending.

Dividends Declared

Oswego & Syracuse.—\$2.25, payable February 20 to holders of record February 8.

Passaic & Delaware.—2½ per cent, payable February 1 to holders of record January 25.

Syracuse, Binghamton & New York.—3 per cent, quarterly, payable February 1 to holders of record January 25.

Average Price of Stocks and Bonds

	Jan. 26	Last Week	Last Year
Average price of 20 representative railway stocks	94.72	94.48	80.78
Average price of 20 representative railway bonds	95.11	94.85	89.78

Railway Officers

Executive

W. Stephenson has been elected president of the Missouri & North Arkansas, with headquarters at Harrison, Ark., and **J. R. Tucker** has been appointed assistant to the president, with the same headquarters.

M. F. Longwill, who has been promoted to assistant to the president of the Wabash, with headquarters at St. Louis, Mo., was born on February 13, 1885, at Indiana, Pa., and graduated from the Ohio Northern University in 1906. He entered railway service in the engineering department of the Missouri Pacific in that year, holding various engineering positions until 1909, when he was promoted to roadmaster. Mr. Longwill was promoted to assistant engineer in 1911, and held that position until 1915, when he was appointed resident engineer on the Union Railway at Memphis, Tenn. He entered the service of the Wabash in January, 1918, as division engineer, and was promoted to assistant chief engineer in October, 1923. He held that position until his recent promotion to assistant to the president.

F. H. Hardin, who has been promoted to assistant to the president of the New York Central Lines, was born on June 14, 1886, at Gainesville, Ga., and was graduated from the Georgia School of Technology in 1908, and from Columbia University in 1909. He entered railway service on August 1, 1909, and until August, 1911, was a special apprentice on the New York Central & Hudson River (now a part of the New York Central), at West Albany, N. Y., and from August, 1911, to March, 1912, was construction inspector. At that time he became assistant engine house foreman, which position he held until October, 1913, when he became assistant general foreman at Utica. From November, 1914, until March, 1917, he was a special engineer in the office of the assistant to the president, and from that date until November, 1918, was master mechanic on the Adirondack division. He became assistant to the federal manager in November, 1918, and in March, 1920, chief engineer of motive power and rolling stock, which position he was holding at the time of his recent promotion to assistant to the president.

Operating

D. S. Lynch has been appointed assistant trainmaster of the West Florida division of the Seaboard Air Line and of the Tampa & Gulf Coast, with headquarters at Tampa, Fla.

F. C. Paulsen, division engineer of the Wyoming division of the Union Pacific, with headquarters at Cheyenne, Wyo., has been promoted to assistant superintendent of the Wyoming division, with the same headquarters, succeeding **H. A. Connett**, promoted.

W. C. Guthrie, division superintendent of the Canadian Pacific, with headquarters at Schreiber, Ont., has been transferred to Woodstock, N. B., succeeding **J. T. Gilliland**, who has retired. Mr. Gilliland was born on August 8, 1860, and entered the service of the Canadian Pacific on August 8, 1892. He was appointed superintendent of the Woodstock division

of the New Brunswick district, with headquarters at Woodstock, N. B., on June 12, 1916, which position he was holding when he retired.

H. J. Armstrong has been appointed general superintendent of the Missouri & North Arkansas, with headquarters at Harrison, Ark. **J. E. Halter** has been appointed assistant superintendent, with the same headquarters, and **G. S. Everett** has been appointed assistant superintendent, with headquarters at Kensett, Ark.

R. W. Brown, who has been appointed general superintendent of the Maryland district of the Baltimore & Ohio, was born on August 5, 1883, at Carlyle, Ill. He was educated in the elementary schools of Carlyle and began railroad service as a laborer on the Baltimore & Ohio in July, 1901, becoming a fireman in 1902, an engineer in 1905, air brake instructor later, and assistant road foreman of engines in 1910. He afterwards became road foreman of engines, and in January, 1914, he was appointed supervisor of locomotive operation. In June, 1915, he was appointed trainmaster and in October, 1917, assistant superintendent. He became superintendent of the Ohio division at Chillicothe, Ohio, in September, 1919. He was transferred to the Connellsville division in October, 1921, and in June, 1923, to the Cumberland division, in the same capacity, which position he held until his recent appointment as general superintendent.

W. G. Curren, who has been appointed general manager of the Baltimore & Ohio, with headquarters at New York, was born on April 12, 1881, at Webb's Mills, N. Y. He was educated in the public schools, later becoming a school teacher. Prior to coming with the Baltimore & Ohio he was connected with the Pennsylvania, Erie and Kansas City Southern, being first identified with the Baltimore & Ohio in March, 1912, as assistant superintendent of transportation. A few months later he was appointed assistant to the general superintendent of transportation and in June, 1917, he became superintendent of transportation. He was furloughed in March, 1918, to become associated with the regional director of the United States Railroad Administration at New York, returning to the Baltimore & Ohio in 1919 as general superintendent of transportation, which position he held at the time of his recent appointment as general manager at New York.

H. A. Connett, who has been promoted to superintendent of the Western division of the Union Pacific, with headquarters at Green River, Wyo., was born on May 23, 1877, at Bedford, Ia., and entered railway service in July, 1890, as a messenger on the Chicago, Burlington & Quincy. During the next 10 years he served successively as telegraph operator.



F. H. Hardin



R. W. Brown



W. G. Curren

agent, dispatcher and night chief dispatcher, entering the service of the Union Pacific in December, 1901, as a train dispatcher. Mr. Connett was later promoted to chief clerk to the division superintendent and still later to chief train dispatcher. He was later appointed division examiner, then promoted to trainmaster, and later to assistant superintendent, in which position he remained until his recent promotion to superintendent of the Western division.

H. R. Laughlin, who has been appointed superintendent of the Cumberland division of the Baltimore & Ohio, with headquarters at Cumberland, Md., was born on October 10, 1870. He entered the service of the Baltimore & Ohio in February, 1884, as a telegraph operator, and later became dispatcher at Oakland, Md. He was promoted to train dispatcher at Wheeling, W. Va., in 1889, and to trainmaster at the same point in 1902, going to Grafton, W. Va., in the same capacity in 1903. He remained in this position until 1910, when he was appointed superintendent of the Monongah division at Grafton. In October, 1912, Mr. Laughlin became superintendent of the Sandy Valley & Elkhorn in Kentucky, and when this line was sold to the Chesapeake & Ohio in 1923, he was furloughed for a brief time, returning to the Baltimore & Ohio as special representative of the operating vice-president, which position he held until the time of his recent appointment as superintendent.



H. R. Laughlin

C. W. Van Horn, who has been promoted to general superintendent of transportation of the Baltimore & Ohio, with headquarters at Baltimore, Md., was born on January 17, 1879,

at Clarksburg, W. Va. He was educated in the public schools and at Salem College, entering the service of the Baltimore & Ohio as a clerk at Fairmont, W. Va., in June, 1901. He served afterwards as agent successively at Byron, Flemington and Clarksburg, W. Va., and in October, 1910, became general yardmaster at Clarksburg. In April, 1911, he became chief clerk to the general superintendent of transportation, at Baltimore, and was promoted to trainmaster of the Monongah division, at Grafton, W. Va., a few months later. Thence Mr. Van Horn was transferred to Chicago in the same capacity, and later to Willard, Ohio, as terminal trainmaster. In April, 1916, he became assistant superintendent of the Pittsburgh division, and in January, 1917, superintendent of the New Castle division, being transferred to Grafton in September, 1918, and to Cumberland in 1920, in the same capacity. He became general superintendent of the Maryland district, at Baltimore, in June, 1923, which position he held until the time of his recent promotion to general superintendent of transportation.

R. L. Schmid, who has been promoted to assistant to the general manager of the Nashville, Chattanooga & St. Louis,



C. W. Van Horn

with headquarters at Nashville, Tenn., was born on March 20, 1886, at Louisville, Ky., and attended the college of engineering of the Kentucky State University from 1907 to 1910. Mr. Schmid's railway service began in February, 1906, when he was employed as a rodman on the Louisville & Nashville. He served in the engineering department of the Penn Tunnel & Terminal Railroad in 1909, returning to the engineering department of the Louisville & Nashville in 1910. He entered the service of the Nashville, Chattanooga & St. Louis in 1915 as a pilot on valuation work and was promoted to resident engineer on construction in 1916. He was promoted to assistant engineer on special assignments in 1918 and was promoted to assistant division engineer of the Chattanooga division in 1919. Mr. Schmid was promoted to division engineer of the Atlanta division in 1920 and continued in that capacity until his recent promotion to the post of assistant to the general manager.

Financial, Legal and Accounting

William C. Chisholm, assistant general counsel of the Canadian National, has been promoted to general counsel. **Ivan C. Rand** has been appointed regional counsel for the Atlantic region, succeeding **C. J. Milligan**, deceased.

L. A. Watkins has been appointed general auditor of the Missouri & North Arkansas, with headquarters at Harrison, Ark., and **T. N. Flynn** has been appointed claim agent, with the same headquarters. **Shouse & Rowland** have been appointed general attorneys for Arkansas, with headquarters at Harrison, and **O. L. Cravens** has been appointed general attorney for Missouri, with headquarters at Neosho, Mo.

Traffic

H. B. Agnew has been appointed general traffic manager of the Missouri & North Arkansas, with headquarters at Harrison, Ark., and **H. P. Mitchell** has been appointed general freight and passenger agent, with the same headquarters.

W. E. Mattox, chief of the tariff bureau of the Wabash, with headquarters at St. Louis, Mo., has been promoted to assistant general freight agent, with the same headquarters, succeeding F. A. Barber, deceased. **C. N. Richards**, assistant chief of the tariff bureau with headquarters at St. Louis, has been promoted to chief of the tariff bureau, in place of Mr. Mattox.

E. W. Abbott, who has been appointed district manager of the Boston & Maine, with headquarters at Portland, Me., was born on August 4, 1881, at Hoosic Falls, N. Y., and was educated at high school and in business college. He entered railway service in 1901, as a telegraph operator on the Boston & Maine, since which he has been consecutively station agent, traveling freight agent, division freight agent, assistant general freight agent, and general freight agent, which position he was holding at the time of his recent appointment to district manager.

Mechanical

W. R. Meeder has been appointed superintendent of motive power of the Missouri & North Arkansas, with headquarters at Harrison, Ark.

The title of **C. H. Terrell**, assistant superintendent of motive power of the Chesapeake & Ohio, has been changed to assistant to the chief mechanical officer.

Edwin P. Moses, who has been appointed engineer of rolling stock of the New York Central Lines, with headquarters at New York, was born on May 13, 1884, at Croton Falls, N. Y. He entered railway service on June 1, 1905, with the New York Central & Hudson River as a draftsman (locomotive and car), and on July 1, 1909, became leading car draftsman. He became chief car draftsman on February 15, 1911, and general car inspector on September 1, 1918. From March 16, 1921, to September 15, 1921, he was foreman construction inspector, and from the latter date to March 16, 1923, was general inspector. He became chief equipment inspector on March 16, 1923, assistant engineer of rolling stock on May 1, 1924, and general equipment inspector of rolling stock on January 1, 1925, which position he was holding at the time of his recent

appointment to engineer of rolling stock of the New York Central Lines.

Charles E. Barba, who has been appointed mechanical engineer of the Boston & Maine, with headquarters at North Station, Boston, was born on May 12, 1877, in Freemansburg, Pa., and was graduated from Lehigh University in 1901. From July, 1901, to July, 1902, he was a draftsman in the Ordnance Department at Washington, D. C. He entered the service of the Pennsylvania in July, 1902, in the motive power department at Altoona, and until February, 1915, was consecutively draftsman, assistant chief draftsman and assistant engineer. He resigned in 1915 to join the Midvale Steel Company at Philadelphia. He was with this company from February, 1915, to November, 1917, first in the production office, then as foreman, and later as superintendent of a machine shop. He left this company in 1917, to take up war-time work at the Watertown Arsenal, and from 1917 to 1922 he served successively as superintendent of the mobile carriage shop and superintendent of the sea coast department at the arsenal. In 1922 Mr. Barba became superintendent of the Osgood-Bradley Car Company at Worcester, Mass., which position he was holding at the time of his recent appointment as mechanical engineer of the Boston & Maine.

Engineering, Maintenance of Way and Signaling

M. McKimmy has been appointed resident engineer of the Missouri & North Arkansas, with headquarters at Harrison, Ark.

W. H. Lawston has been appointed division engineer of the Wyoming division of the Union Pacific, with headquarters at Cheyenne, Wyo., succeeding **F. C. Paulsen**, promoted to assistant superintendent.

Frank C. Shepherd, assistant chief engineer of the Boston & Maine, has been appointed chief construction engineer, and **William J. Backes**, who resigned recently as assistant general manager of the New York, New Haven & Hartford, has been appointed engineer in charge of maintenance of way. Both appointments are effective February 1.

Purchasing and Stores

Frank J. McMahon, who has been promoted to general storekeeper of the New York Central, lines west of Buffalo, with headquarters at Collinwood, Ohio, was born on May 20, 1883, at Milwaukee, Wis., and entered railway service as a clerk on the New York Central at Collinwood, in December, 1906. He was promoted to storekeeper at Alliance, O., in July, 1908, and was transferred to Air Line Junction, O., in January of the following year. Mr. McMahon was promoted to assistant storekeeper at Collinwood in March, 1910, and held that position until April, 1912, when he was promoted to storekeeper at Gibson, Ind. He was appointed traveling storekeeper, with headquarters at Collinwood, in April, 1915, and was promoted to district storekeeper, with the same headquarters, in September, 1916. Mr. McMahon held that position until June, 1922, when he was promoted to assistant general storekeeper, with headquarters at Collinwood. He continued in that capacity until his recent promotion to general storekeeper.

F. J. McMahon



L. Frost has been appointed general storekeeper of the Missouri & North Arkansas, with headquarters at Harrison, Ark.

J. P. Murphy, general storekeeper of the New York Central, lines west of Buffalo, with headquarters at Collinwood, O., has been promoted to stores assistant to the manager of purchases and stores of the system, with headquarters at Cleveland, O., a newly created position.

R. C. Harris, general storekeeper of the Pennsylvania, with headquarters at Philadelphia, Pa., has been promoted to assistant stores manager, succeeding **G. W. Snyder**, who recently became assistant chief engineer in charge of maintenance. **C. B. Hall**, assistant to the general purchasing agent, has been promoted to general storekeeper, with headquarters at Philadelphia, Pa., succeeding Mr. Harris. **W. W. Morris**, assistant purchasing agent, has been promoted to assistant to the general purchasing agent, succeeding Mr. Hall, and **E. J. Lamneck**, assistant to the purchasing agent, has been promoted to stationary storekeeper, with headquarters at Pittsburgh, Pa., succeeding **A. W. Able**, who died recently.

Officers of B. & M. Vermont Roads

The three Vermont railroads (the St. Johnsbury & Lake Champlain, the Montpelier & Wells River and the Barre & Chelsea) recently detached from the Boston & Maine and now operated independently are all managed in the same interest, although not consolidated; and the lists of officers (including also those of two lines which were not in the B. & M. system) are given below. E. S. French, the officer in charge of purchases of all five roads, has his headquarters at Rochester, Vt.

ST. JOHNSBURY & LAKE CHAMPLAIN

C. H. Stearns, President.
E. S. French, Vice-President.
R. L. Patrick, Treasurer.
H. C. Stoughton, General Freight & Passenger Agent, Montpelier, Vt.
J. A. Cannon, Superintendent.
J. E. Willis, Auditor, Montpelier, Vt.
W. E. Coombs, Roadmaster.
John Wahlen, Mechanical Superintendent.
J. A. Cannon, in charge of local operations.
E. S. French, in charge of purchases and general management.
Operating headquarters, St. Johnsbury, Vt.

MONTPELIER & WELLS RIVER AND BARRE & CHELSEA

E. S. French, President.
J. T. Smith, Treasurer.
H. C. Stoughton, G. F. & P. A.
G. K. Groom, Superintendent.
John Wahlen, Mechanical Superintendent.
J. E. Willis, Auditor.
H. E. Cook, Roadmaster.
G. K. Groom, in charge of local operations.
E. S. French, president in charge of purchases, and general management.
Operating headquarters at Montpelier, Vt.

SPRINGFIELD TERMINAL RAILWAY COMPANY

(Electric line connecting Charlestown, N. H., with Springfield, Vt.)
E. S. French, President.
E. A. Davis, Vice-President.
C. G. Staples, Treasurer.
John Wahlen, Superintendent.
J. E. Coombs, Roadmaster.
John Wahlen, superintendent in charge of local operations.
E. S. French, president in charge of purchases and general management.
Operating headquarters at Springfield, Vt.

WHITE RIVER RAILROAD COMPANY

(From Bethel, on the Central Vermont, Westward 20 miles, to Rochester)
E. S. French, President.
E. L. Bennett, Vice-President.
E. A. Davis, Treasurer.
G. E. Stevens, Superintendent.
G. E. Stevens, in charge of local operations.
E. S. French, president in charge of purchases, and general management.
Operating headquarters at Rochester, Vt.

Obituary

C. L. Singer, district passenger agent of the Michigan Central, with headquarters at St. Thomas, Ont., died on January 18, at his office.

Richard C. Hoffman, at one time president of the Seaboard Air Line, died at his home in Baltimore, Md., on January 21. Mr. Hoffman was born on July 13, 1839, at Baltimore, Md., and entered railway service in May, 1888, and until February 25, 1893, was vice-president of the Seaboard Air Line, and on the latter date became president of the same road. This position he held until February, 1899. He was active in other industries and remained in business until 1914 when he retired.